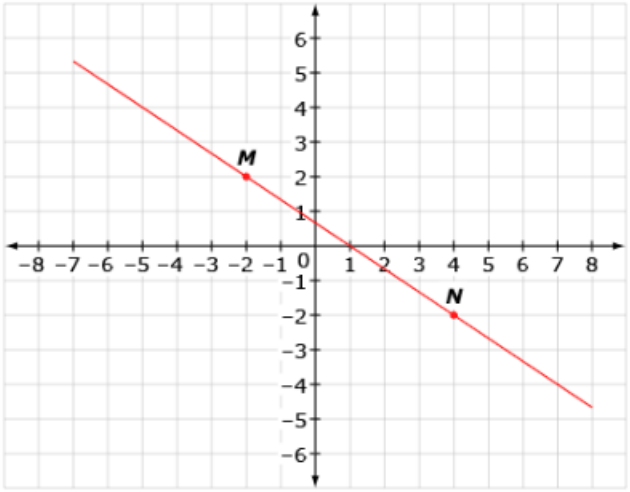
Level 4: Geometry Midtest Answer Key

Question 1:



Study the figure above. Given a line that passes through points MN, translate the points to a set of points $M'N'$ on a line parallel to MN.

Which set of points are the result of this translation?

a. $M' = (-5, 1)$; $N' = (1, -3)$

b. $M' = (-5, -2)$; $N' = (4, 2)$

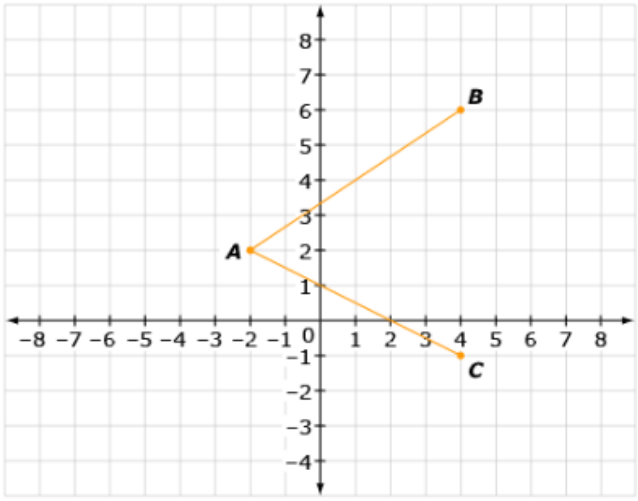
c. $M' = (2, 5)$; $N' = (-2, -5)$

d. $M' = (2, 4)$; $N' = (6, 4)$

Continue

Question 2:

Study the figure below.



Line AB is translated so that Point A' is at (2, 3) and Point B' is at (8, 7).

Which coordinates for Point C' will give $\angle B'A'C'$ equal to $\angle BAC$?

a. (5, 3)

b. (5, 0)

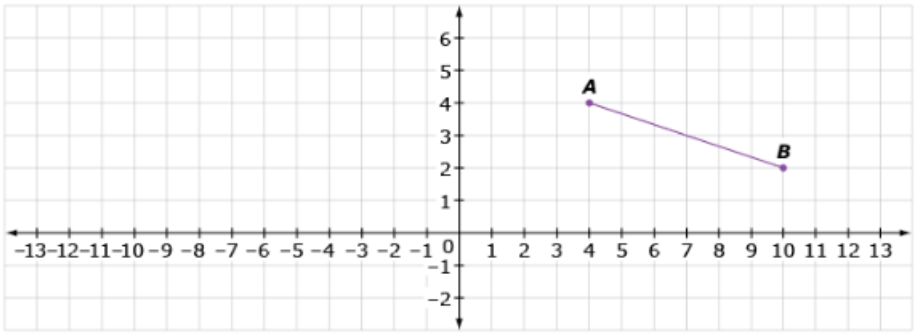
c. (8, 3)

d. (8, 0)

Continue

Question 3:

Study the figure below.



Line segment *AB* is translated at 3 units left and reflected over the *x*-axis.

What are the new coordinates of line segment *AB*?

a. (–1, 4) and (–7, 2)

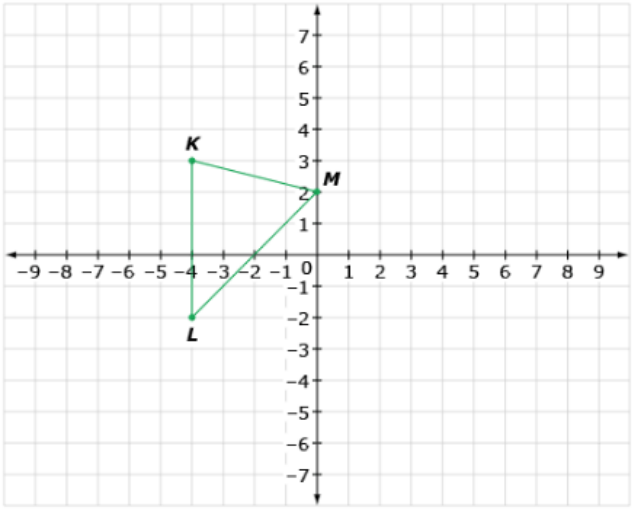
b. (1, –4) and (7, –2)

c. (7, –4) and (13, –2)

d. (-7, 4) and (–13, 2)

Question 4:

Study the figure below.



Triangle *KLM* is rotated clockwise 90° around point *L*, and then translated 2 units left.

What are the new coordinates for point *K*?

a. (1, –2)

b. (–1, –2)

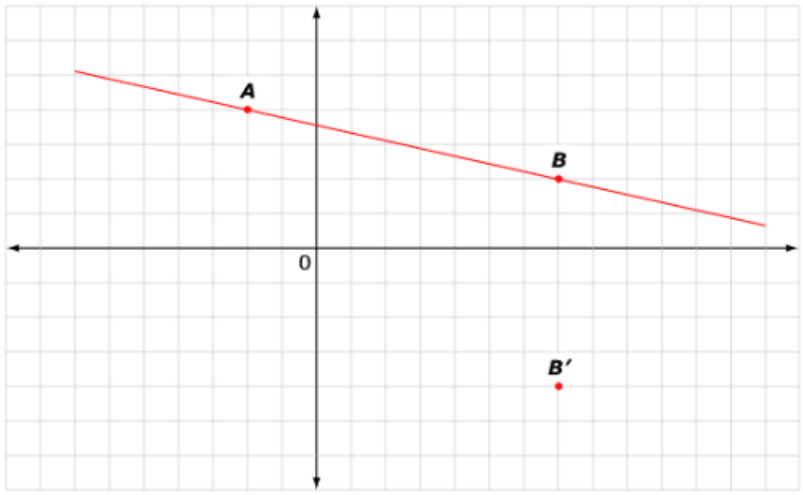
c. (–6, –7)

d. (–2, –7)

Continue

Question 5:

Study the figure below.



Which coordinates for Point A' makes $\overline{A'B'}$ parallel to AB?

a. (7, −1)

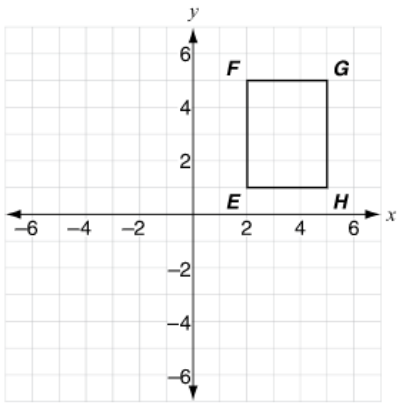
b. (1, 1)

c. (−2, −2)

d. (−4, 0)

Question 6:

Rectangle *EFGH* is shown below.



Jorge reflects the rectangle over the *y*-axis.
What are the coordinates of the image of point *H*?

a. $(5, -1)$

b. $(-1, 5)$

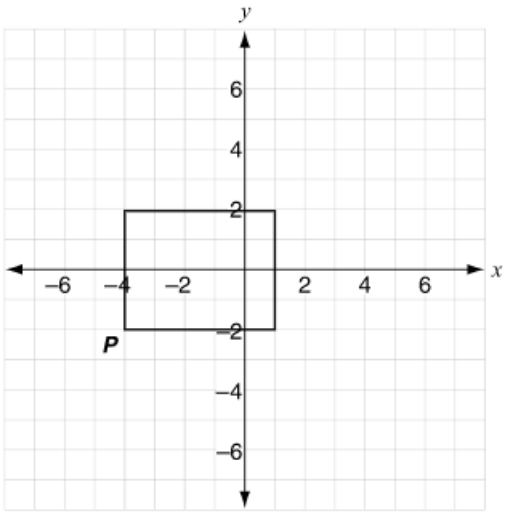
c. $(-5, -1)$

d. $(-5, 1)$

Continue

Question 7:

Carlos dilates the rectangle below with the center at the origin and a scale factor of 2.



What are the coordinates of the image of point P?

a. $(-8, -4)$

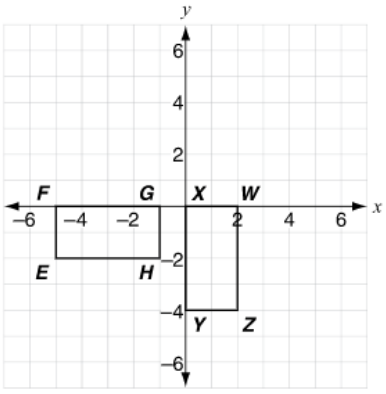
b. $(-6, -4)$

c. $(-2, 0)$

d. $(-2, -1)$

Question 8:

Two rectangles are shown on the coordinate plane below.



Which transformation can be used to show that rectangle *EFGH* is congruent to rectangle *WXYZ*?

a. reflect rectangle *EFGH* over the *x*-axis, then rotate it 90° clockwise about the origin

b. reflect rectangle *EFGH* over the y-axis, then rotate it 90° counterclockwise about the origin

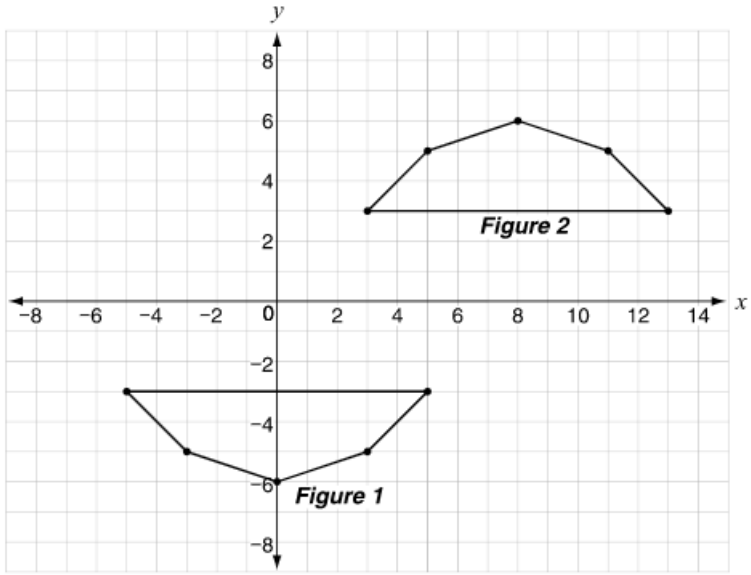
c. translate rectangle *EFGH* 1 unit to the left, then rotate it 90° clockwise about the origin

d. translate rectangle *EFGH* 1 unit to the right, then rotate it 90° counterclockwise about the origin

Continue

Question 9:

Two pentagons are shown on this coordinate plane.



Which of the following transformations could not be used to map Figure 1 onto Figure 2?

a. Reflect Figure 1 over the *x*-axis, then translate it 8 units to the right.

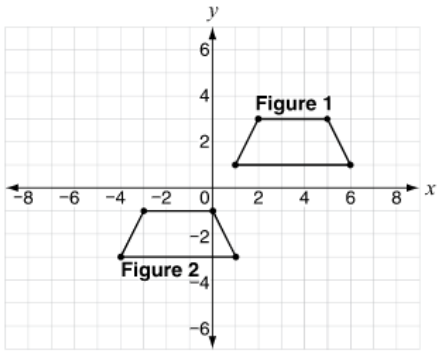
b. Translate Figure 1 to the right 8 units, then rotate it 90° counterclockwise.

c. Rotate Figure 1 about (0, 0) 180° clockwise, then translate it 8 units to the right.

d. Translate Figure 1 to the right 8 units, then reflect it over the *x*-axis.

Question 10:

Two trapezoids are shown on this coordinate plane.



Which of the following transformations could not be used to map Figure 1 onto Figure 2?

a. Translate Figure 1 down 4 units, then 5 units to the left.

b. Reflect Figure 1 over the line $x = 1$, then translate it 4 units down.

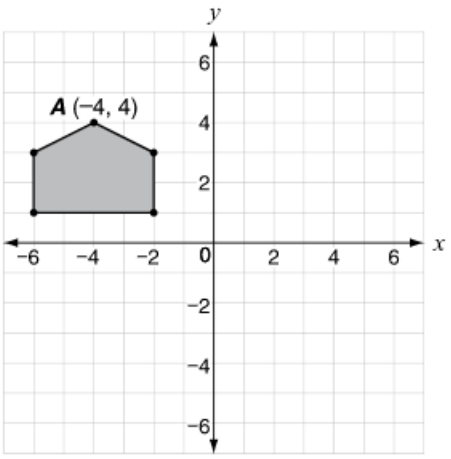
c. Reflect Figure 1 over the *x*-axis, then translate it 5 units to the left.

d. Translate Figure 1 down 4 units, then reflect it over the line $x = 1$.

Continue

Question 11:

A pentagon is shown on the coordinate plane below.

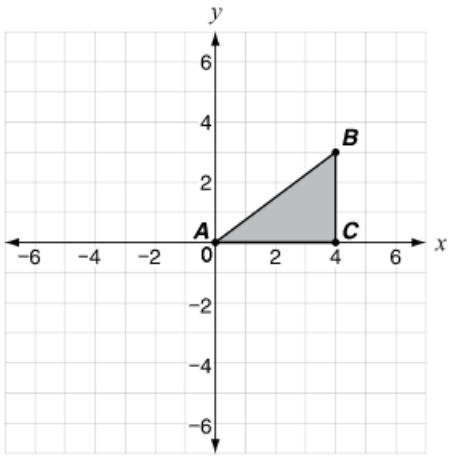


The pentagon is translated 8 units to the right and 1 unit down. What are the coordinates of the image of point *A*?

(4 , 3)

Question 12:

Triangle *ABC* is shown on the coordinate plane below.



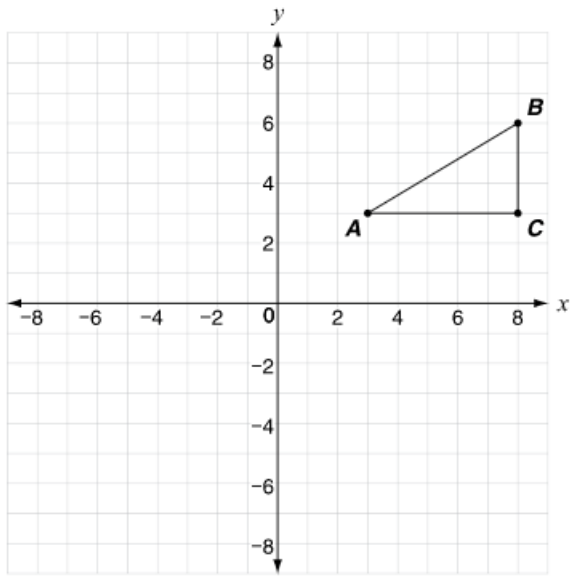
Triangle *ABC* is rotated 90° clockwise about point *A*. What are the coordinates of the image of point *C*?

(0 , -4)

Continue

Question 13:

Triangle *ABC* is shown on the coordinate plane below.

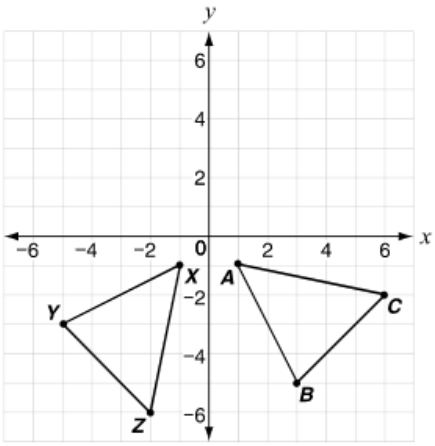


Triangle *ABC* is reflected over the *y*-axis. What are the coordinates of the image of Point *B*?

(-8 , 6)

Question 14:

Triangle *ABC* and triangle *XYZ* are shown on this coordinate plane.



Which transformation moves △*ABC* onto △*XYZ*?

a. reflection over the *x*-axis

b. reflection over the *y*-axis

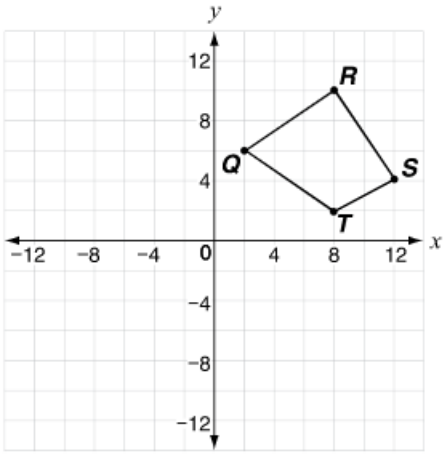
c. 90° clockwise rotation about the origin

d. 90° counterclockwise rotation about the origin

Continue

Question 15:

Quadrilateral *QRST* is shown on this coordinate plane.



The quadrilateral is rotated 180° counterclockwise about the origin. Then it is dilated by a scale factor of $\frac{1}{2}$ with the origin as the center of dilation.

What are the coordinates of the image of point *R* after both transformations?

(-4 , -5)

Stop