

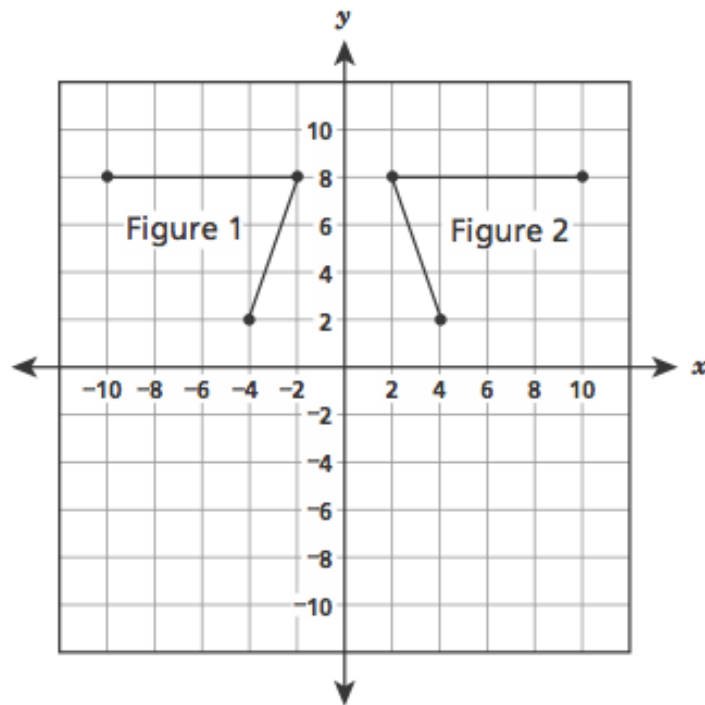
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#1

Question 1

Figure 1 can be transformed to create Figure 2 using a single transformation.



Which transformation can be used to accomplish this?

- A dilation
- B rotation
- C reflection
- D translation

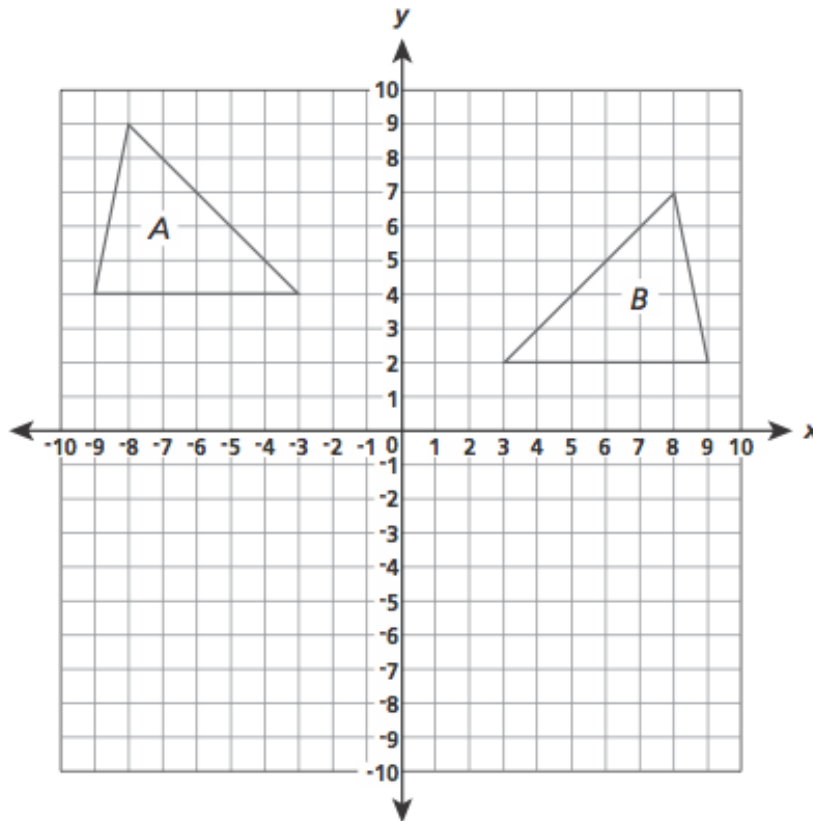
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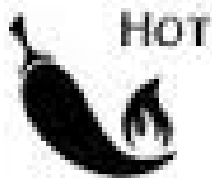
Question 2

Which sequence of transformation takes ΔA to its image, ΔB ?



- A** reflection over the x -axis and translation 2 units down
- B** reflection over the y -axis and translation 2 units down
- C** translation 2 units down and 90° rotation about the origin
- D** translation 12 units right and 90° rotation about the origin

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Question 3

A sequence of transformations was applied to an equilateral triangle in a coordinate plane. The transformations used were rotations, reflections, and translations. Which statement about the resulting figure is true?

- A** It must be an equilateral triangle with the same side lengths as the original triangle.
- B** It must be an equilateral triangle, but the side lengths may differ from the original triangle.
- C** It may be a scalene triangle, and all the side lengths may differ from the original triangle.
- D** It may be an obtuse triangle with at least one side the same length as the original triangle.

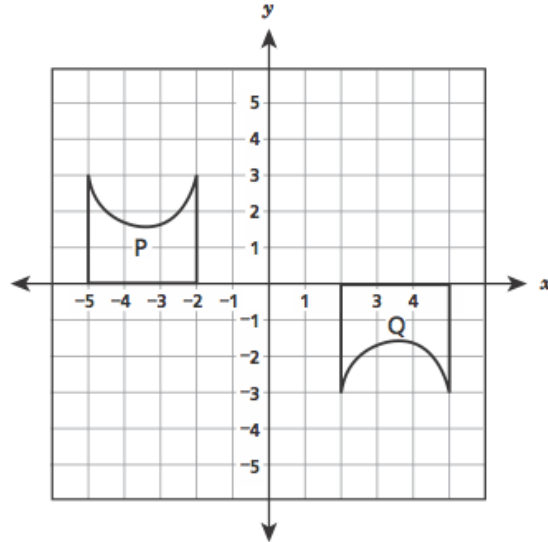
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Question 4

Figure Q was the result of a sequence of transformations on figure P, both shown below.



Which sequence of transformations could take figure P to figure Q?

- A reflection over the x -axis and translation 7 units right
- B reflection over the y -axis and translation 3 units down
- C translation 1 unit right and 180° rotation about the origin
- D translation 4 units right and 180° rotation about the origin

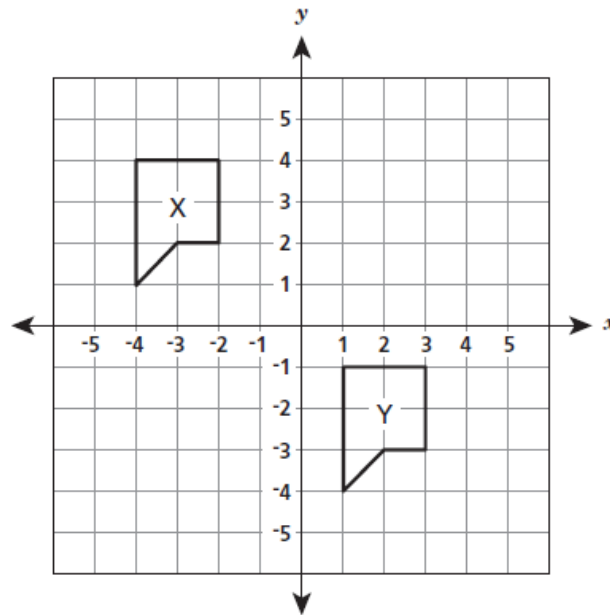
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Question 5

Figure X and figure Y are shown on the coordinate grid below.



Which statement about figures X and Y must be true?

- A. A series of translations will transform figure X to figure Y, and the figures will be congruent.
- B. A 180° clockwise rotation will transform figure X to figure Y, and the figures will be congruent.
- C. A series of translations will transform figure X to figure Y, but the figures will not be congruent.
- D. A 180° clockwise rotation will transform figure X to figure Y, but the figures will not be congruent.

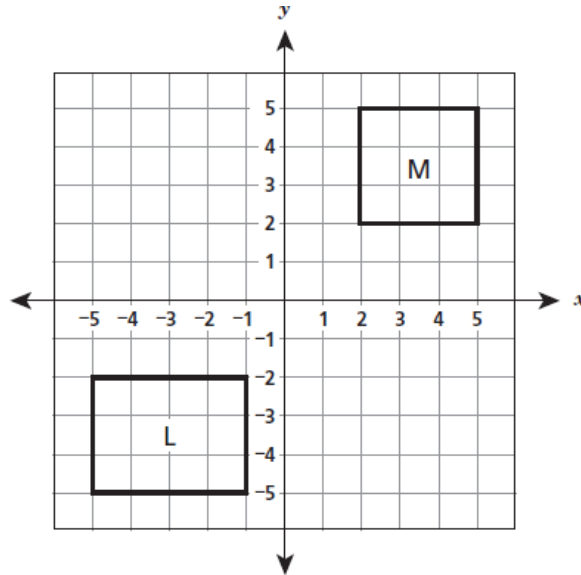
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Question 6

Figure L and figure M are shown on the grid below.



Maria wants to transform figure L to figure M using only rotations, reflections, and translations. Which statement is true?

- A. The transformation can be done with a reflection followed by a rotation.
- B. The transformation can be done with a reflection followed by a translation.
- C. The transformation cannot be done because figure L is not congruent to figure M.
- D. The transformation cannot be done because figures L and M are in different quadrants.

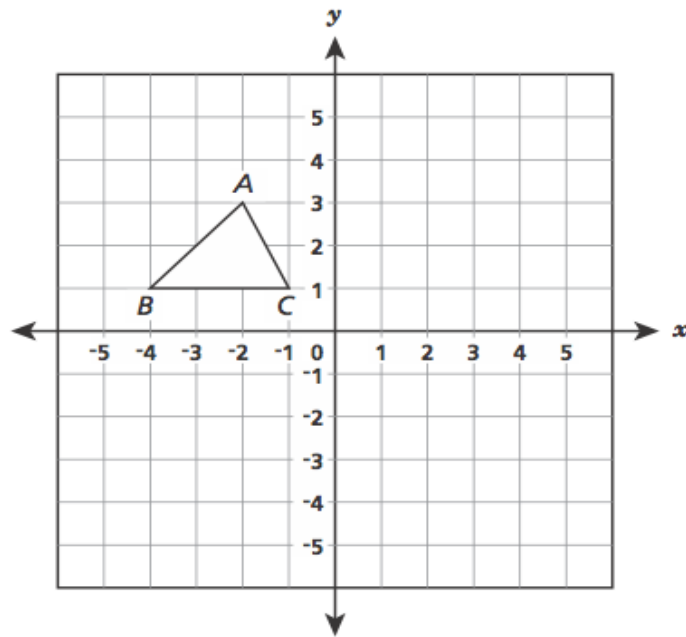
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Question 7

If $\triangle ABC$ is rotated 90° clockwise about the origin, what will be the new coordinates of vertex B?



- A (-1, -4)
- B (1, 4)
- C (4, 1)
- D (4, -1)

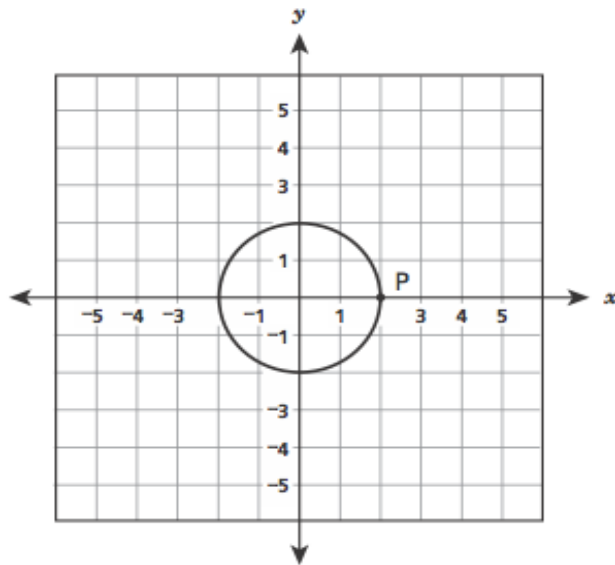
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Question 8

The circle shown below is centered at $(0, 0)$ and passes through point P located at $(2, 0)$.



The circle is dilated with the center of dilation at the origin and a scale factor of 0.5 and then translated up 3 units. What are the coordinates of the image of point P after this transformation?

- A (4, 3)
- B (1, 3)
- C (1, 1.5)
- D (0.5, 3)

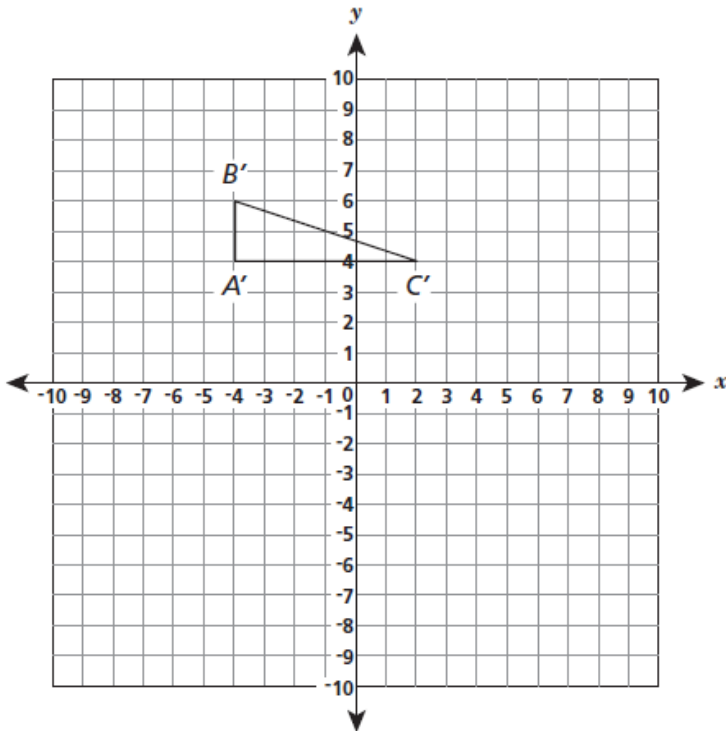
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Question 9

When $\triangle ABC$ was dilated by a scale factor of 2, centered at the origin, the result was its image $\triangle A'B'C'$ shown on the coordinate plane below. The vertices of $\triangle A'B'C'$ are $A'(-4, 4)$, $B'(-4, 6)$, and $C'(2, 4)$.



What are the coordinates of the vertices of $\triangle ABC$?

Vertices A (_____, _____) B (_____, _____) C (_____, _____)

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Question 10

Triangle ABC was rotated 90° clockwise. Then it underwent a dilation centered at the origin with a scale factor of 4. Triangle $A'B'C'$ is the resulting image.

What parts of $\triangle A'B'C'$ are congruent to the corresponding parts of the original triangle? Explain your reasoning.

Compare the perimeters of $\triangle ABC$ and $\triangle A'B'C'$. Explain your reasoning.
