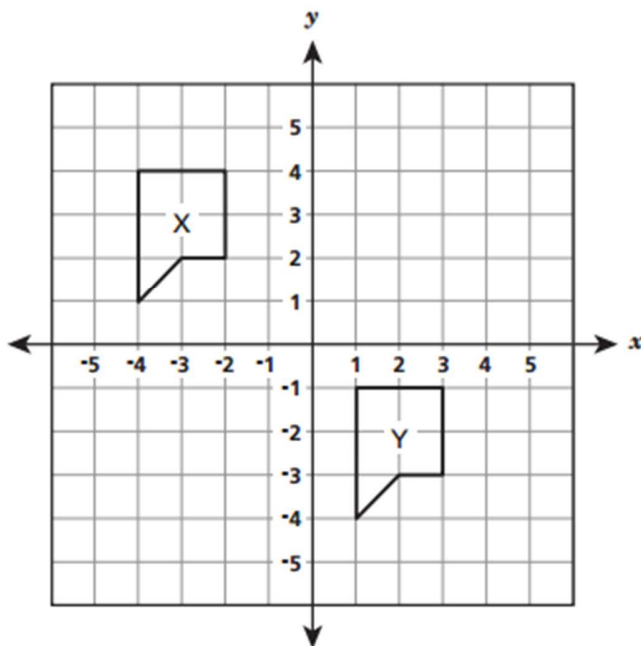


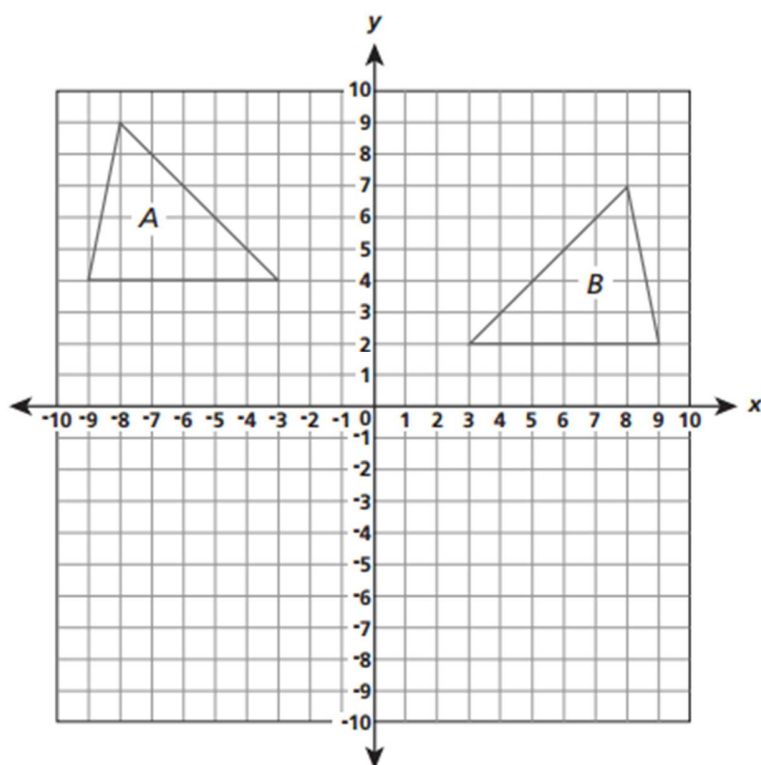
Figure X and figure Y are shown on the coordinate grid below.



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  $180^\circ$  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  $180^\circ$  clockwise rotation will transform figure X to figure Y, but the figures will not be congruent.

Which sequence of transformations takes  $\triangle A$  to its image,  $\triangle B$ ?



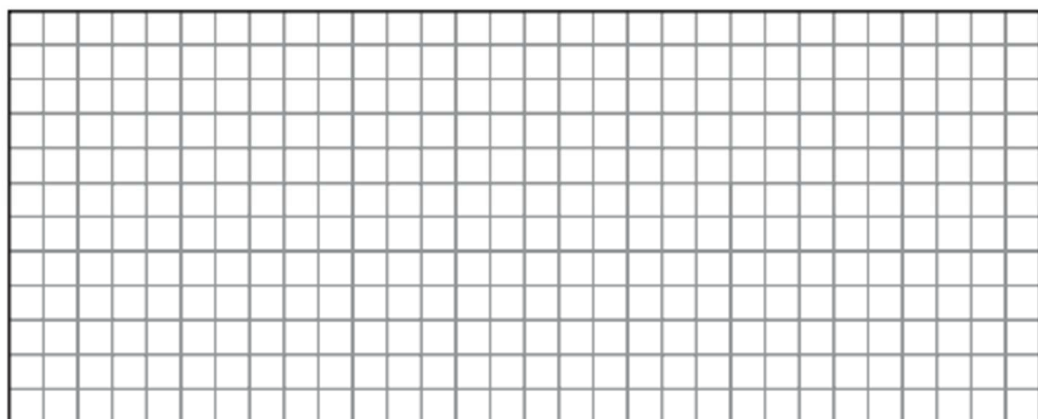
Alan created each design by moving the same triangle in different ways and tracing it after each move.



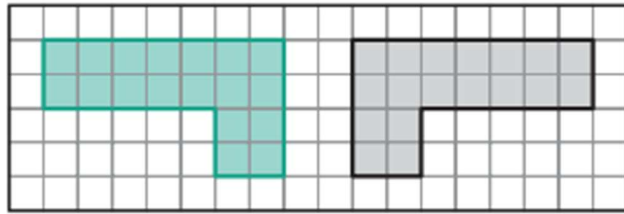
**A** Identify the type of transformation that created the designs shown above.

**I** \_\_\_\_\_ **II** \_\_\_\_\_

**B** Choose a different figure and make your own design on the grid below using one type of transformation. Describe how you moved the figure to make your design.



The figure on the right is a transformation of the figure on the left. Each square represents 1 unit.



**2** Is the transformation a translation, reflection, or rotation? Explain your reasoning.

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**3** How do the lengths of the sides in the original figure compare to the lengths of the sides in its image? How do you know?

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**4** Describe the angles in the original figure. \_\_\_\_\_

Describe the angles in the image. \_\_\_\_\_

**5** Are any of the sides of the original figure parallel? \_\_\_\_\_

Are any of the sides parallel in the image? \_\_\_\_\_