

MeTEOR Performance Task

Eighth Grade

Mathematics

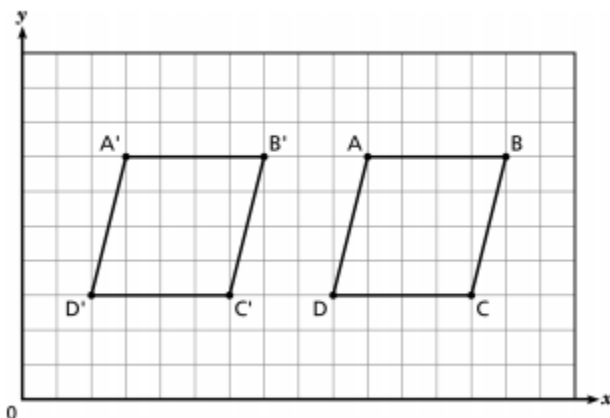
Translations and Dilations

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MeTEOR[™]
CONNECTING THE DOTS

Performance Task Item: Translations and Dilations

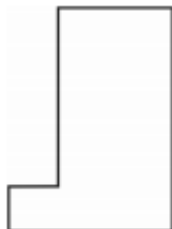
Task/Question 1:



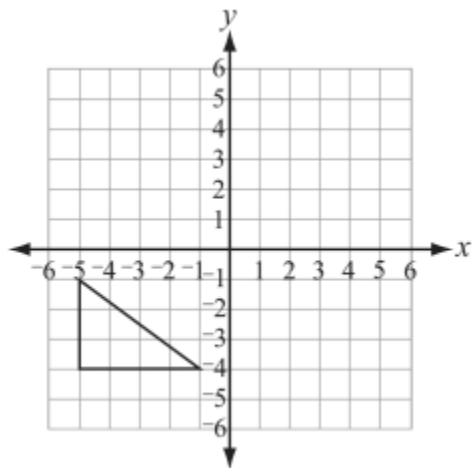
- A.** Parallelogram $ABCD$ was **translated** to parallelogram $A'B'C'D'$. How many units were the x coordinates of the parallelogram $ABCD$ moved?
- B.** In what direction were the x coordinates of the parallelogram $ABCD$ translated?

Task/Question 2:

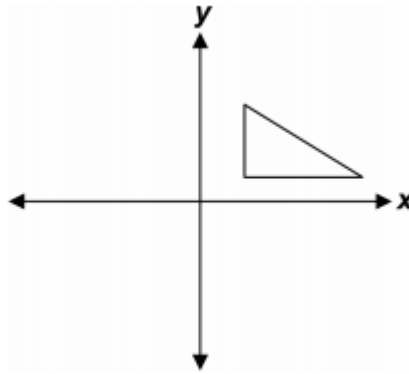
A. Below is a shape. Draw the shape after it has undergone a **180° rotation**.



B. Rotate the triangle below 90° clockwise about the origin. Draw the triangle in the new position on the graph paper provided.

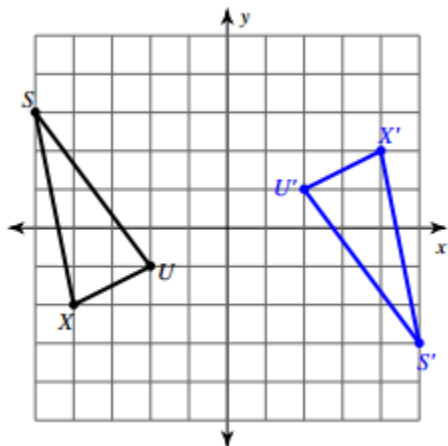


- C. **Reflect** the triangle below over the x-axis, then again over the y-axis. Draw the triangle in the new position on the graph paper provided.



Task/Question 3:

- A.** How has the figure below been **translated**? Defend your answer.



- B.** On graph paper draw and label a triangle. Describe its original position and size.
- C. Rotate, Translate, and Reflect** the triangle from Part B so that one side is touching an original side. List your steps and explain how your process is the **most efficient**:

Task/Question 4:

A. Create a Three-Dimensional Figure on a coordinate plane by completing the following:

- Place the origin in the center of the coordinate plane.
- Plot and label these points:

$$A = (1, 5) \quad B = (7, -2) \quad C = (4, -3) \quad D = (-4, -3) \quad E = (-1, -2)$$

- Create solid lines for:

$$\overline{AB} \quad \overline{AC} \quad \overline{BC} \quad \overline{CD} \quad \overline{AD}$$

- Create dashed lines for:

$$\overline{AE} \quad \overline{DE} \quad \overline{EB}$$

B. Transform the image ABCDE that you created in Part A using the rule $(x, y) \rightarrow (2x, 2y)$ to get the new image **VWXYZ**:

Complete:

- $V = (,) \quad W = (,) \quad X = (,) \quad Y = (,) \quad Z = (,)$
- Plot and label V, W, X, Y and Z on the same coordinate plane as Part A, but in a **different color**.

- Create solid lines for:

$$\overline{VW} \quad \overline{VX} \quad \overline{WX} \quad \overline{XY} \quad \overline{VY}$$

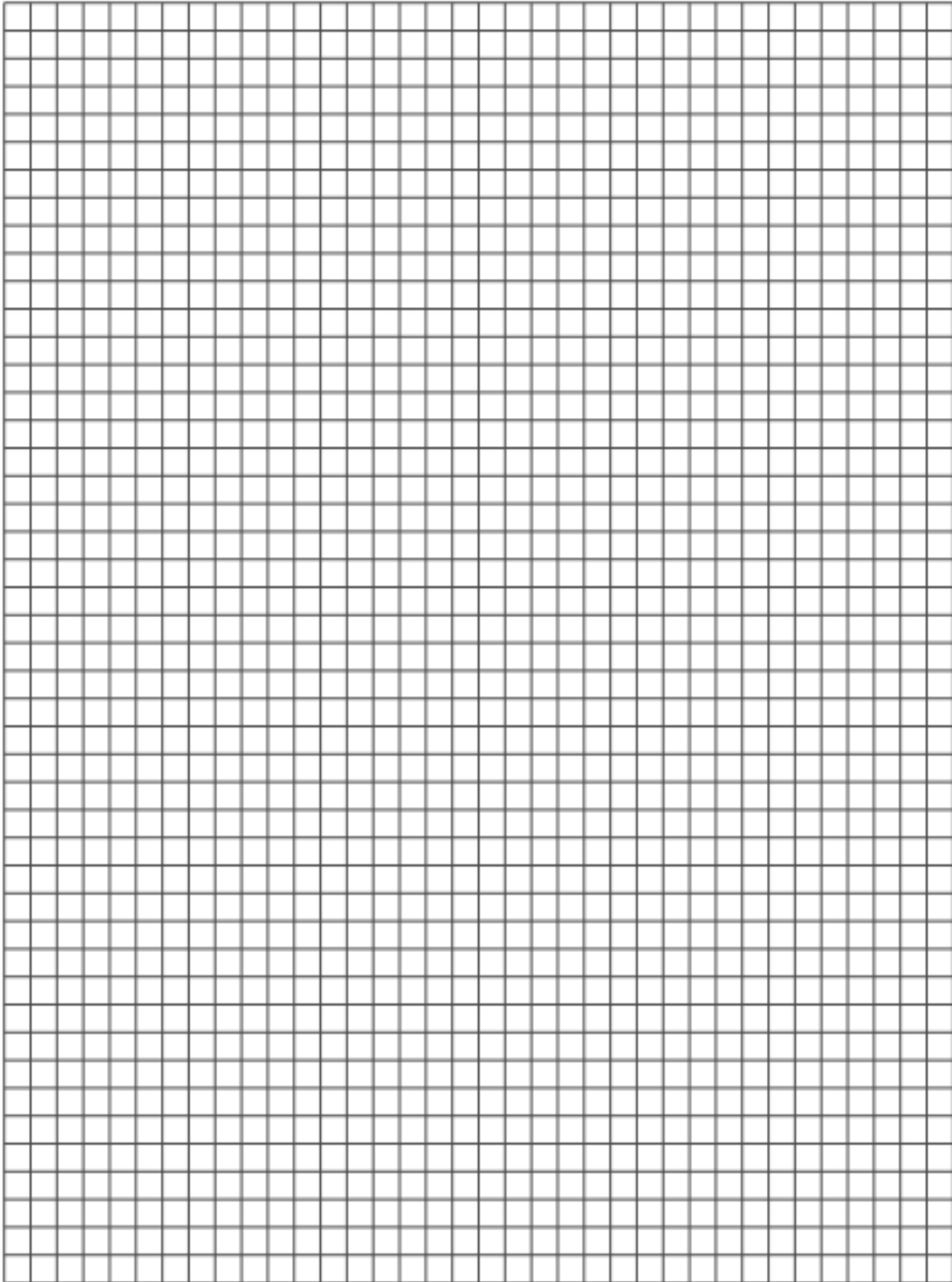
- Create dashed lines for:

$$\overline{VZ} \quad \overline{YZ} \quad \overline{ZW}$$

C. How do the two images in Part A and B compare?

- D.** What transformation occurred after applying the rule? Why did this transformation occur?
- E.** Are the images in Part A and B proportional? Provide justification in mathematical language to defend your answer.

Name: _____ Date: _____





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