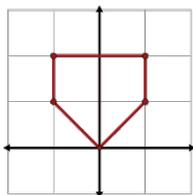


TRANSFORMATION PUZZLE: STUDENT A

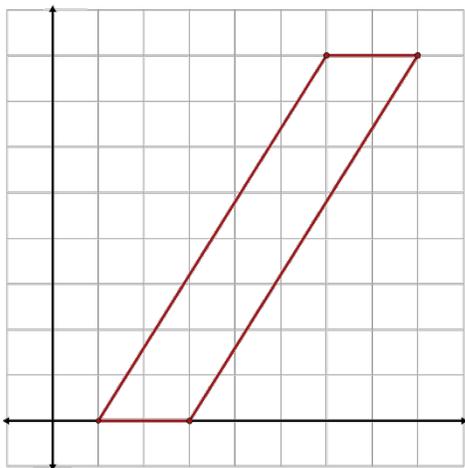
Perform the following transformations for each given preimage.



1) Dilation: $k = 2$
Translation: $\langle -4, -12 \rangle$

2) Dilation: $k = 2$
Translation: $\langle 0, -12 \rangle$

3) Dilation: $k = 2$
Translation: $\langle 4, -12 \rangle$



4) Translation: $\langle -1, 0 \rangle$

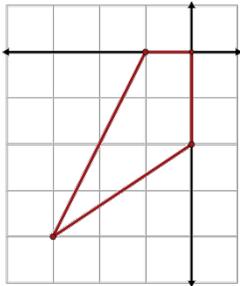
5) Reflection: over the y -axis
Translation: $\langle 1, 0 \rangle$

6) Reflection: over the x -axis
Translation: $\langle -1, 0 \rangle$

7) Translation: $(x, y) \rightarrow (x-1, y)$
Rotation: 180°

TRANSFORMATION PUZZLE: STUDENT A

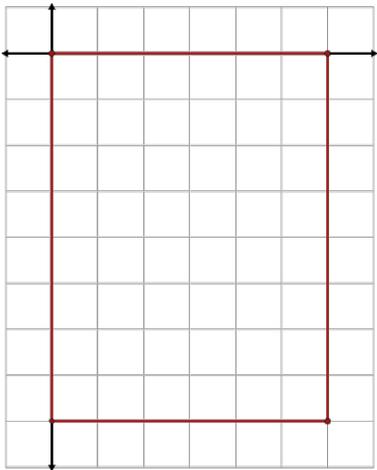
Perform the following transformations for each given preimage.



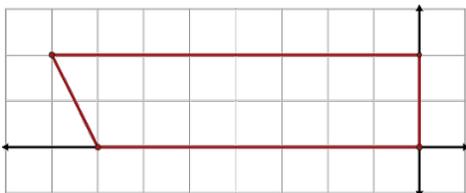
8) **Translation:** left 6 units and down 8 units

9) **Reflection:** over the y -axis

Translation: $\langle 6, -8 \rangle$



10) **Translation:** $\langle -3, 23 \rangle$



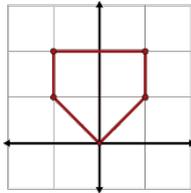
11) **Translation:** $\langle 0, 8 \rangle$

12) **Translation:** $\langle 0, 8 \rangle$

Reflection: over the y -axis

TRANSFORMATION PUZZLE: STUDENT B

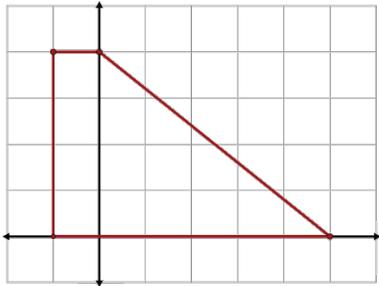
Perform the following transformations for each given preimage.



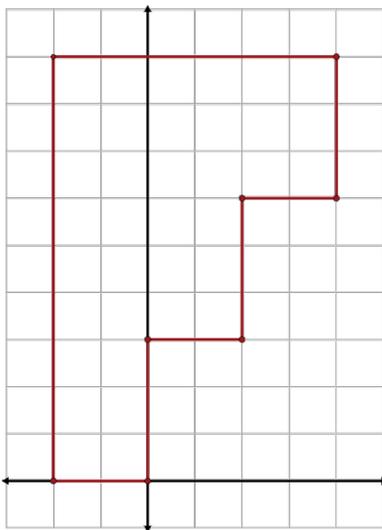
- 1) **Dilation:** $k = 3$
Translation: $\langle -6, -18 \rangle$

- 2) **Dilation:** $k = 3$
Translation: $\langle 0, -18 \rangle$

- 3) **Dilation:** $k = 3$
Translation: $\langle 6, -18 \rangle$



- 4) **Translation:** right 4 units and up 19 units



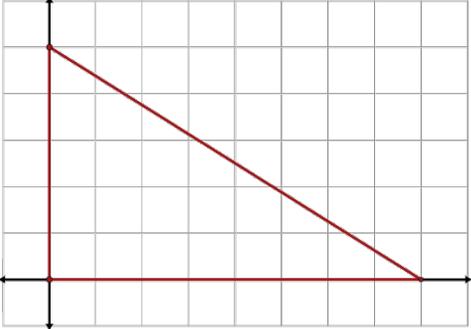
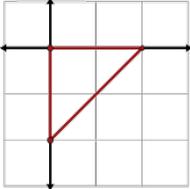
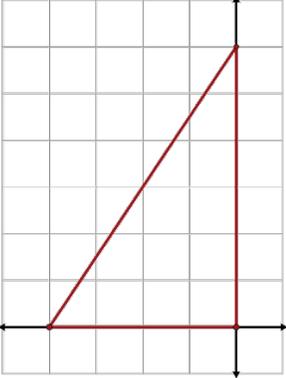
- 5) **Reflection:** over the y -axis

Translation: $\langle 14, -4 \rangle$

- 6) **Translation:** $(x, y) \rightarrow (x - 14, y - 4)$

TRANSFORMATION PUZZLE: STUDENT B

Perform the following transformations for each given preimage.

	<p>7) Translation: $\langle 8, 5 \rangle$</p> <p>8) Reflection: over the y-axis Translation: $\langle -8, 5 \rangle$</p> <p>9) Dilation: $k = 2$ Rotation: 180° Translation: $\langle 16, 15 \rangle$</p> <p>10) Dilation: $k = 2$ Rotation: 180° Translation: $\langle 16, 15 \rangle$ Reflection: over the y-axis</p>
	<p>11) Rotation: 270° Translation: $\langle -3, 21 \rangle$</p>
	<p>12) Dilation: $k = \frac{1}{2}$ Rotation: 90° Translation: $\langle -3, 23 \rangle$</p>

TRANSFORMATION PUZZLE: GRAPH

