

LEVEL: EMERGING

Directions: Use the translation $(x, y) \rightarrow (x - 8, y + 4)$

1) What is the image of $A(2, 6)$?

2) What is the image of $B(-1, 5)$?

3) What is the pre-image of $C'(-3, -10)$?

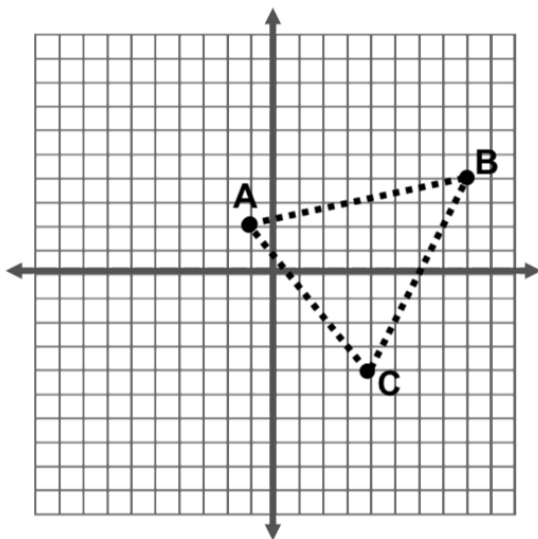
Directions: Graph and label the image of the figure using the given translation. Make sure to use prime notation!

4) $(x, y) \rightarrow (x - 1, y + 1)$

A': _____

B': _____

C': _____

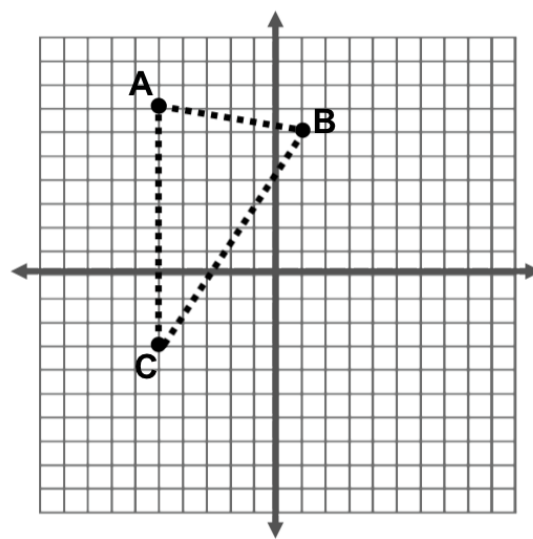


5) $(x, y) \rightarrow (x + 3, y - 2)$

A': _____

B': _____

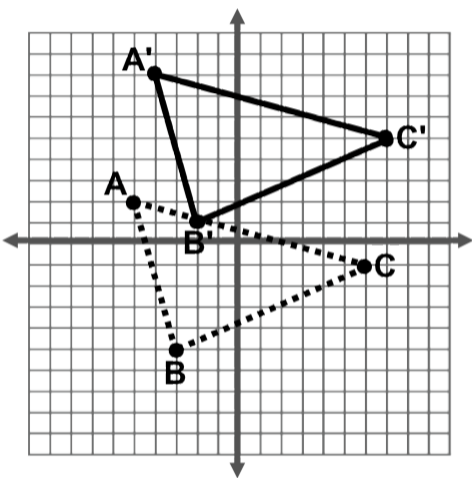
C': _____



LEVEL: PROFICIENT

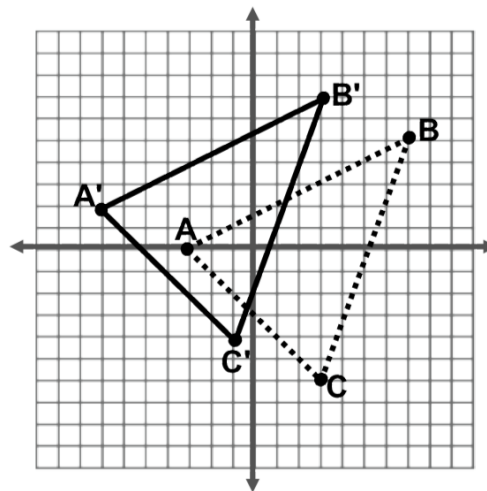
Directions: Write a rule for the translation of $\triangle ABC$ to $\triangle A'B'C'$.

6)



Rule: $(x, y) \rightarrow$

7)



Rule: $(x, y) \rightarrow$

8) Write a translation that shifts the pre-image up 4 and left 2. Write your answer in the form:

$$(x, y) \rightarrow (x \pm a, y \pm b).$$

9) Write a translation that shifts the pre-image right 1. Write your answer in the form:

$$(x, y) \rightarrow (x \pm a, y \pm b).$$

Directions: Find the coordinates of the vertices of each figure after the given translation. Make sure to use prime notation!

10) $(x, y) \rightarrow (x - 5, y + 7)$

$X(-2,4), Y(-5, -7), Z(4,8)$

11) $(x, y) \rightarrow (x + 4, y - 10)$

$E(0,2), F(-4, -5), G(3,7), H(6, -2)$

LEVEL: MASTERY

12) Describe what the difference is between the **image** and the **pre-image** of a shape.

13) List three real life examples of translations.

14) Graph and label the quadrilateral ABCD with vertices $A(-3,4)$, $B(2,5)$, $C(4, -1)$ and $D(-2, -5)$. Find the image of each vertex after the translation $(x, y) \rightarrow (x - 4, y + 1)$, and then followed by $(x, y) \rightarrow (x + 5, y - 3)$. Then graph and label the image using prime notation $A'B'C'D'$ and $A''B''C''D''$.

A' : _____

B' : _____

C' : _____

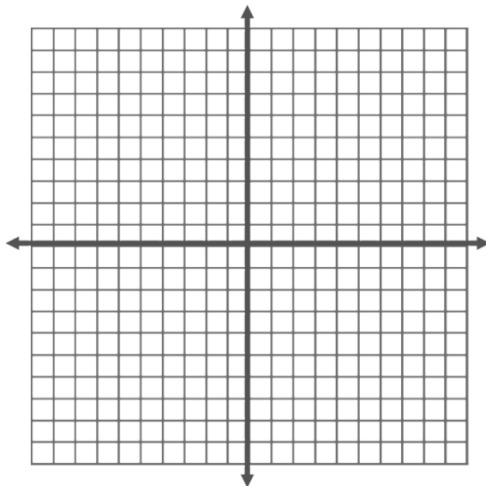
D' : _____

A'' : _____

B'' : _____

C'' : _____

D'' : _____



15) Graph and label the quadrilateral ABCD with vertices $A(0,2)$, $B(3,6)$, $C(1, -5)$ and $D(-3, -4)$. Find the image of each vertex after the translation $(x, y) \rightarrow (x + 2, y - 2)$, and then followed by $(x, y) \rightarrow (x - 6, y - 4)$. Then graph and label the image using prime notation $A'B'C'D'$ and $A''B''C''D''$.

A' : _____

B' : _____

C' : _____

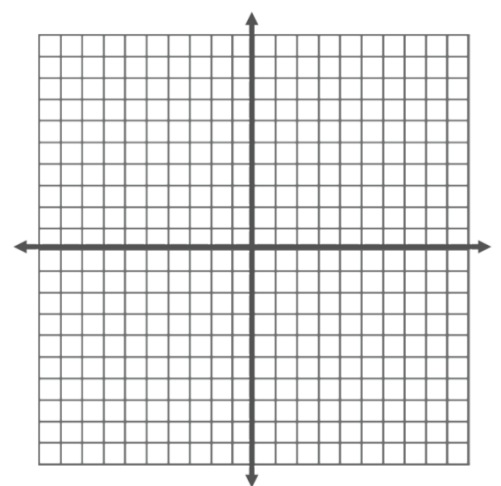
D' : _____

A'' : _____

B'' : _____

C'' : _____

D'' : _____



16) When a figure is translated $(x, y) \rightarrow (x - 2, y + 1)$, which of the following applies? Select all that apply.

- (a) Translation is a rigid motion
- (b) Figure is moved up
- (c) Figure is moved right
- (d) Figure is dilated

17) When a figure is translated $(x, y) \rightarrow (x, y - 7)$, which of the following applies? Select all that apply.

- (a) Translation is a rigid motion
- (b) Figure is moved down
- (c) Figure is moved right
- (d) Figure is dilated