

First type of Transformation ①

Translation: slide - you move a figure's points up, down, left, or right. Since we're not changing the figure's size or shape, a translation is also an isometry.

To translate a figure, we use vector notation. $\langle x, y \rangle$

x value moves: Left (neg), Right (pos)
 y value moves: Down (neg), Up (pos)

So, to find the image (result) after a translation, you just add the preimage's x-coor to vector's x-coor AND preimage's y-coor to vector's y-coor.

<u>Preimage</u>	^{ADD} ^{ADD} x, y <u>Vector</u>	<u>Image</u>
Z (4, 7)	$\langle -3, 5 \rangle$	Z' (1, 12)
R (2, 11)	$\langle 4, -5 \rangle$	R' (6, 6)
S (-4, -1)	$\langle 7, -3 \rangle$	S' (3, -4)

②

To Find the vector $\langle x, y \rangle$
based on preimage & image:

Start with image and subtract
preimage coordinates.

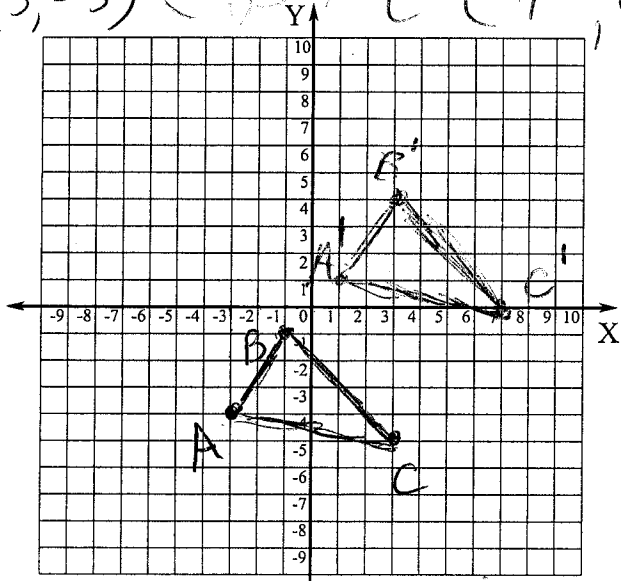
$$A(6, 0)$$

$$A'(0, -3)$$

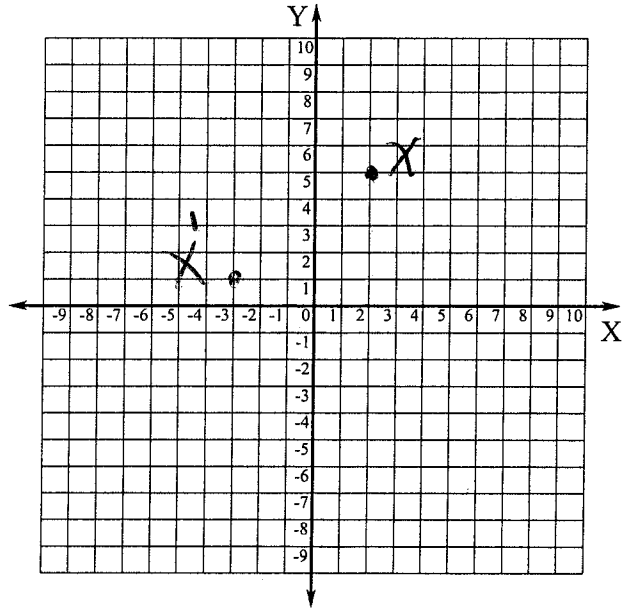
Find Vector $\langle 0-6, -3-0 \rangle$

$$\langle -6, -3 \rangle$$

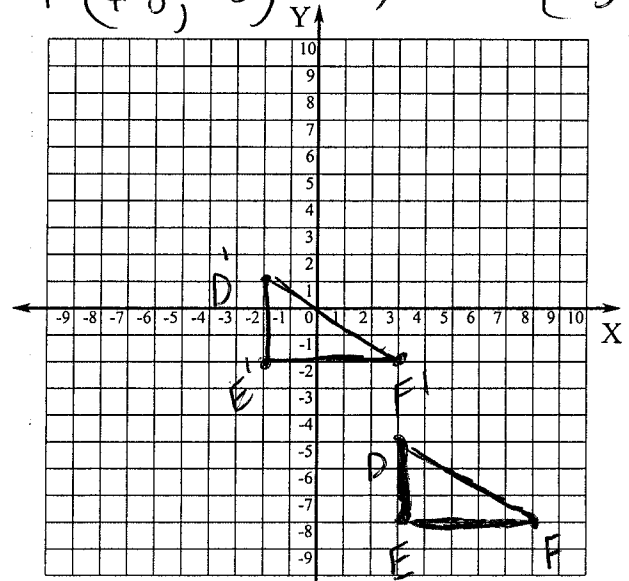
preimage	vector	image
A (-3, -4)	$\langle 4, 5 \rangle$	A' (1, 1)
B (-1, -1)	$\langle 4, 5 \rangle$	B' (3, 4)
C (3, -5)	$\langle 4, 5 \rangle$	C' (7, 0)



preimage $X(2, 5)$ image $X'(-3, 1)$



preimage	vector	image
D (3, -5)	$\langle -5, 6 \rangle$	D' (-2, 1)
E (3, -8)	$\langle -5, 6 \rangle$	E' (-2, -2)
F (8, -8)	$\langle -5, 6 \rangle$	F' (3, -2)



vector $\langle -5, -4 \rangle$
translation

