

Answer Key

9.2 Translations

Characteristics of a Translation

- slide
- figure moved in a direction
- does not change the shape OR size.

Translation Vector

- describes the length of movement and direction.

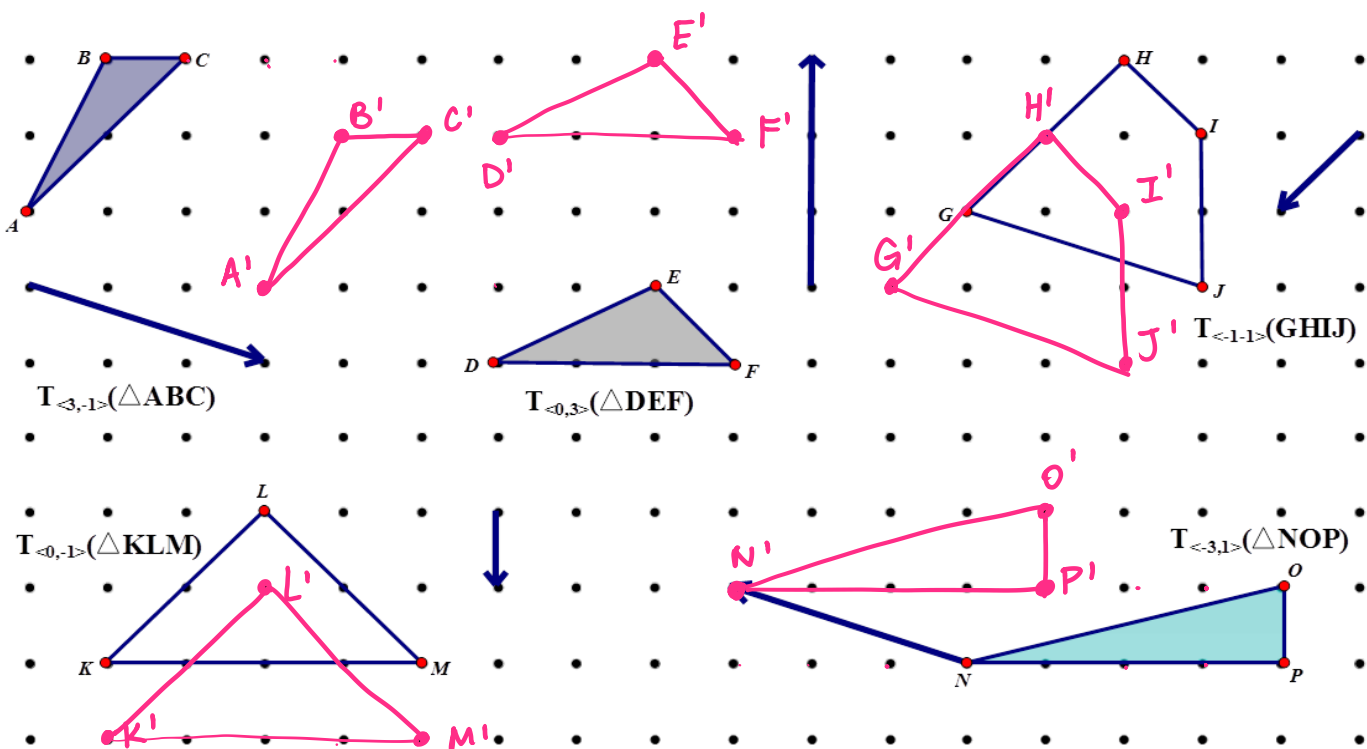
1) The pool of a health club undergoing renovation is being moved from the center of the bottom floor to the far right roof deck. They want to move the pool up 8 stories and to the right 6 yards.

Which of the following represents the job the construction workers need to do?

- a) 8 units in the $-x$ direction and 6 units in the $+y$ direction
- b) 6 units in the $-x$ direction and 8 units in the $+y$ direction
- c) 6 units in the $+x$ direction and 8 units in the $+y$ direction**
- d) 8 units in the $+x$ direction and 6 units in the $+y$ direction



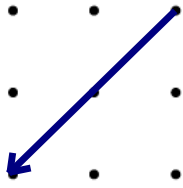
2. Use the grid or patty paper to translate the following figures. Label the image.



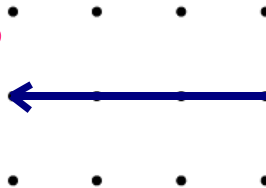
3. Determine the translation coordinate rule from the vector.

a) $T(x,y) \rightarrow (x-2, y-2)$ b) $T(x,y) \rightarrow (x-3, y)$ c) $T(x,y) \rightarrow (x+3, y-1)$

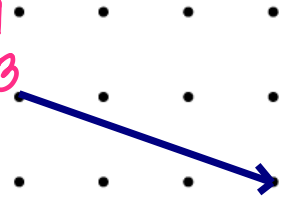
down 2
Left 2



left 3



down 1
Right 3



4. Determine the translation rule from the pre-image and image. (sketch a quick graph if confused)



a) $A(3,5)$ $A'(-1,3)$

$T(x,y) \rightarrow (x-4, y-2)$

b) $A(-4,11)$ $A'(3,0)$

$T(x,y) \rightarrow (x+7, y-11)$

c) $A(0,-8)$ $A'(-1,-3)$

$T(x,y) \rightarrow (x-1, y+5)$

5. Convert between vector component form and coordinate form.

a) $T_{\langle -5, 2 \rangle}(A) =$

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

b) $T_{\langle 0, -12 \rangle}(A) =$

$T(x,y) \rightarrow (x, y-12)$

c) $T_{\langle -1.5, -7 \rangle}(A) =$

$T(x,y) \rightarrow (x-1.5, y-7)$

6. Write the coordinate rule that matches the description.

a) 4 down and 3 right

$T(x,y) \rightarrow (x+3, y-4)$

b) left 7 and down 2

$T(x,y) \rightarrow (x-7, y-2)$

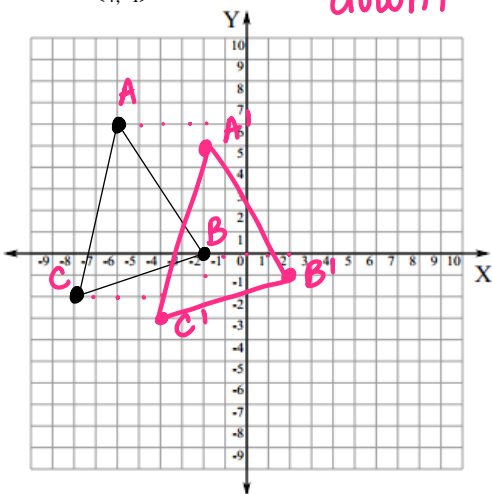
c) right 1

$T(x,y) \rightarrow (x+1, y)$

7. Draw the translation of the graph of each function along the given vector.

a) $T_{\langle 4, -1 \rangle}(\triangle ABC)$

Right 4
down 1



b) $T_{\langle -6, -3 \rangle}(\triangle ABC)$

