

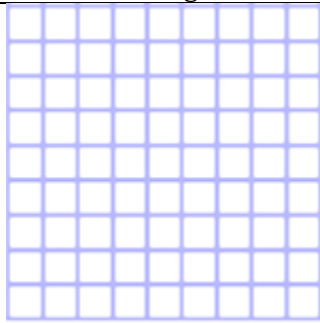
## Lesson 2.6 – Sequencing Translations

In the next several lessons, we will be moving objects using a combination of the three basic rigid motions. To review, the three basic rigid motions are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. In this lesson we will move objects around the coordinate plane using two or more translations.

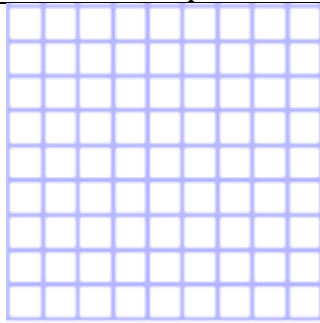
### Quick Questions

- What two things do we need to translate an object?
  
- A term that can be used to describe the two items above is \_\_\_\_\_.

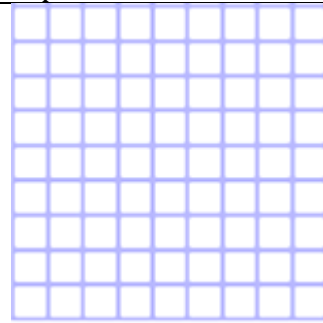
**Set 1** – On the grids below, draw a vector to represent each description.



Draw vector  $\overrightarrow{AB}$  that moves a point 3 units to the right and 5 units down.



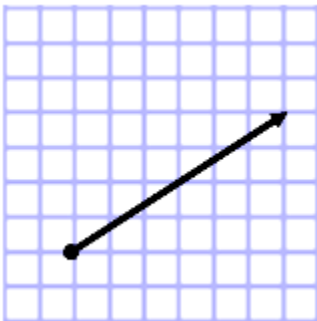
Draw vector  $\overrightarrow{DE}$  that moves a point 6 units to the left and 2 units up.



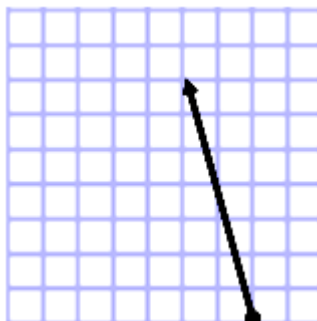
Draw vector  $\overrightarrow{FG}$  that moves a point 7 units to the left and 4 units down.

**Set 2** – Label each vector accordingly. In the space below write a description that would describe each vector.

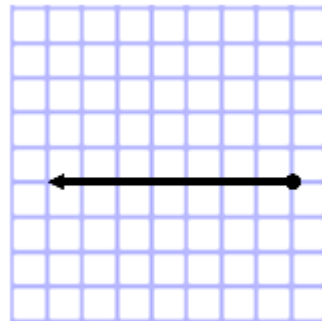
Label vector  $\overrightarrow{HI}$



Label vector  $\overrightarrow{KL}$



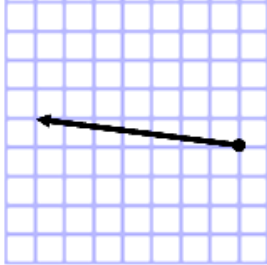
Label vector  $\overrightarrow{NO}$



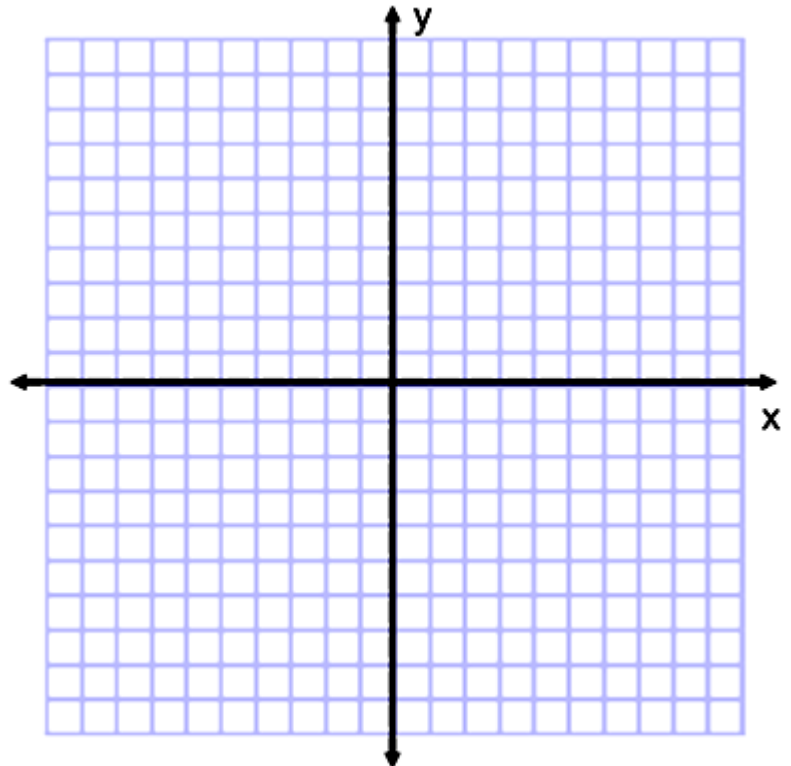
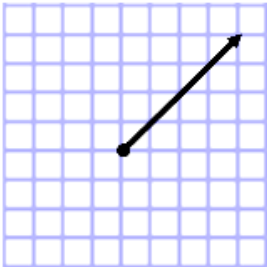
**Set 3** – Translate each object using each vector given and label appropriately. Complete all tasks given.

**A.** Plot the points  $A(2, -8)$ ,  $B(6, -3)$  and  $C(9, -7)$ . Connect the points to form triangle  $ABC$ . Translate  $ABC$  using the vectors below.

vector 1



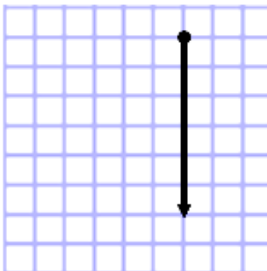
vector 2



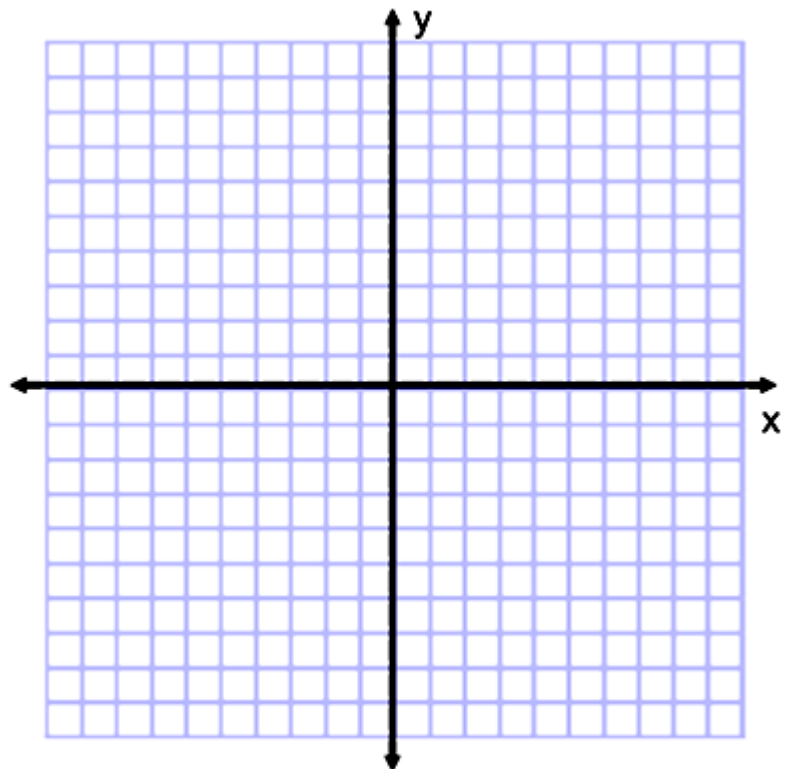
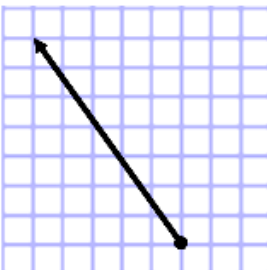
In quadrant II, draw a vector  $\overrightarrow{QR}$  that would take triangle  $A'B'C'$  back to triangle  $ABC$ .

**B.** Plot the points  $F(1, 3)$ ,  $G(1, 6)$ ,  $H(4, 3)$  and  $I(4, 6)$ . Connect the points to form square  $FGHI$ . Translate  $FGHI$  using the vectors below.

vector 1

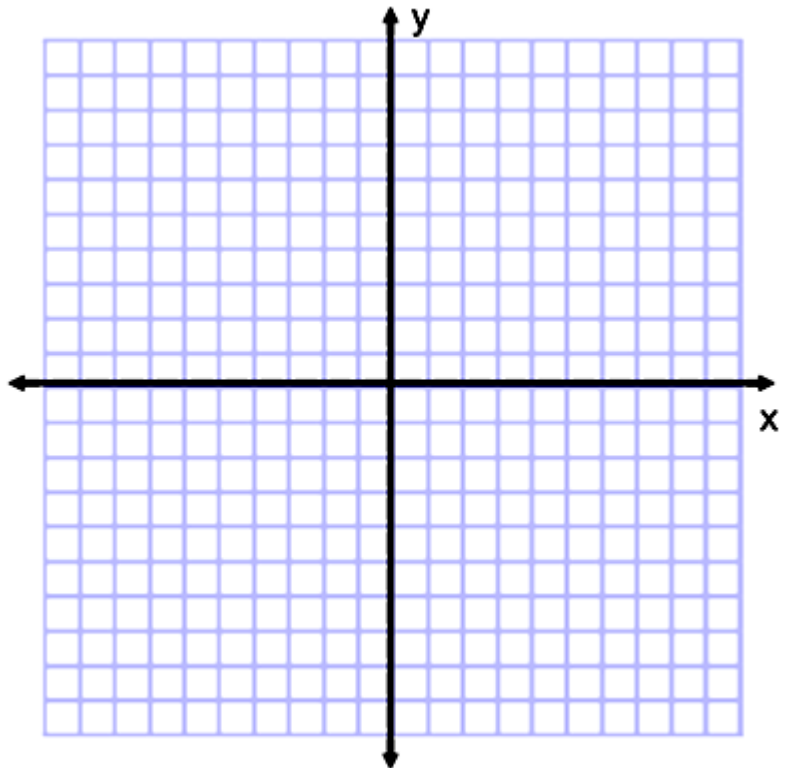
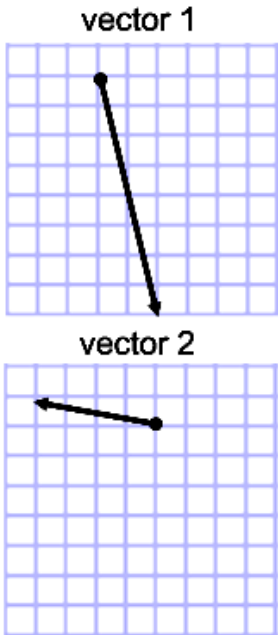


vector 2



In quadrant III, draw a vector  $\overrightarrow{QR}$  that would take square  $F'G'H'I'$  back to square  $FGHI$ .

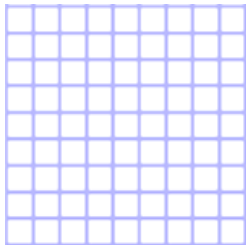
C. Plot the points K(7, 2), L(9, 3) and M(8, 5). Connect the points to form triangle KLM. Translate KLM using the vectors below.



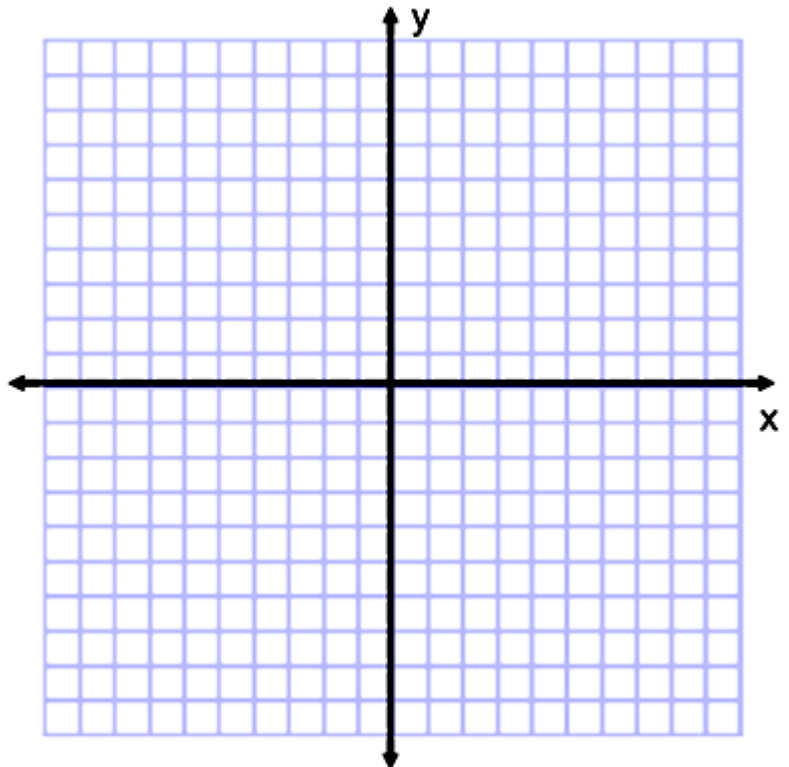
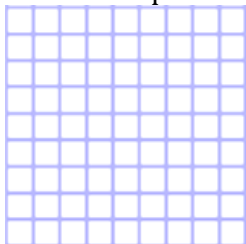
In quadrant II, draw a vector  $\overrightarrow{QR}$  that would take triangle  $K''L''M''$  back to triangle KLM.

D. Plot the points S(0,3), T(4,0) and U(-1,-1). Connect the points to form triangle STU. Translate STU using the vectors below.

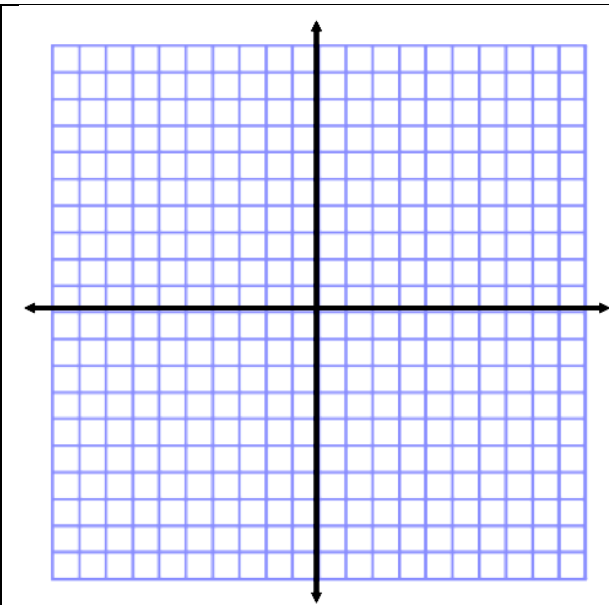
Draw vector  $\overrightarrow{AB}$  that moves a point 4 units to the right and 3 units down.



Draw vector  $\overrightarrow{DE}$  that moves a point 7 units to the left and 1 unit up.

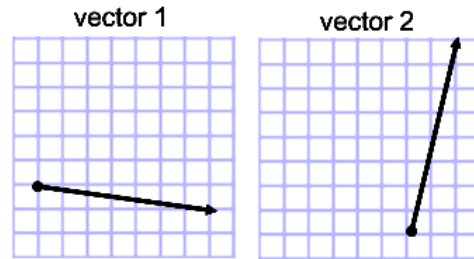


In quadrant I, draw a vector  $\overrightarrow{QR}$  that would take triangle  $S''T''U''$  back to triangle STU.

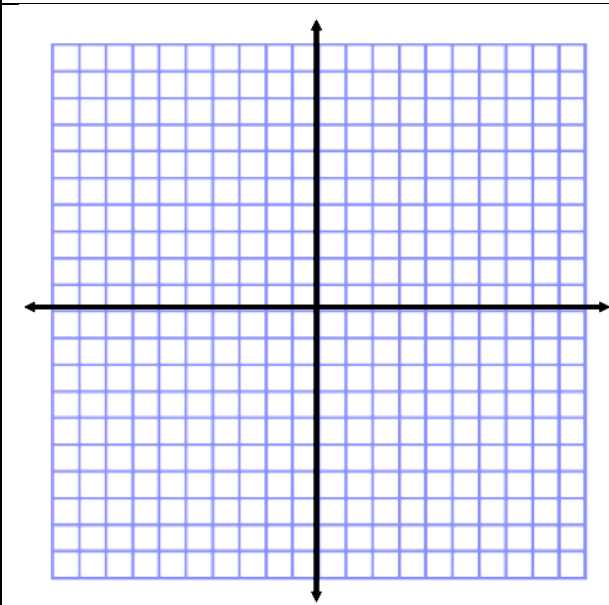


**R#1**

Label the axes. Plot the following points, connect the points to form triangle DEF: D(-4, -1), E(-1, -1), F(-2, -6). Translate DEF using the vectors below. Illustrate each triangle after each translation and label appropriately.

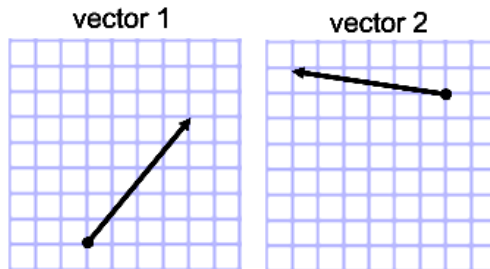


In quadrant II, draw a vector  $\overrightarrow{QR}$  that would take triangle D'E'F' back to triangle DEF.

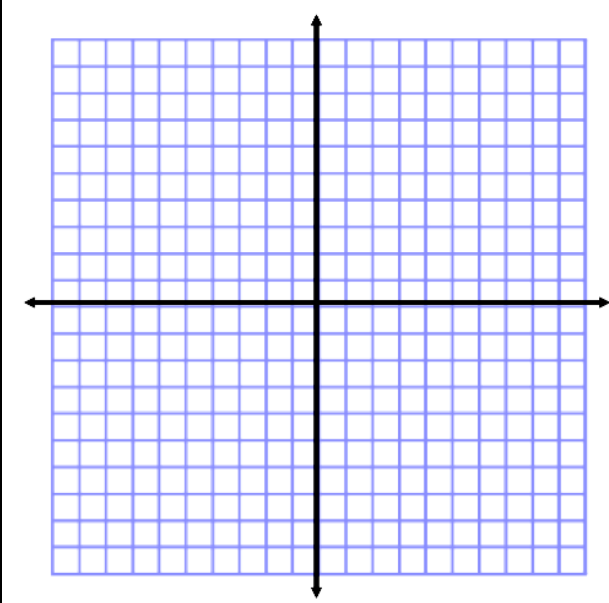


**R#2**

Label the axes. Plot the following points, connect the points to form triangle XYZ: X(5, -2), Y(2, 0), Z(1, -6). Translate XYZ using the vectors below. Illustrate each triangle after each translation and label appropriately.

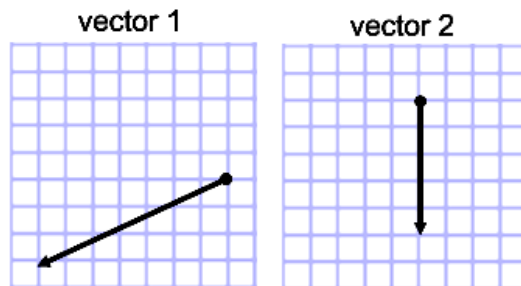


In quadrant III, draw a vector  $\overrightarrow{QR}$  that would take triangle X''Y''Z'' back to triangle XYZ.



**R#3**

Label the axes. Plot the following points, connect the points to form square ABCD: A(2, 2), B(6, 2), C(6, 6), D(2, 6). Translate square ABCD using the vectors below. Illustrate each square after each translation and label appropriately.



In quadrant IV, draw a vector  $\overrightarrow{QR}$  that would take square A''B''C''D'' back to square ABCD.

