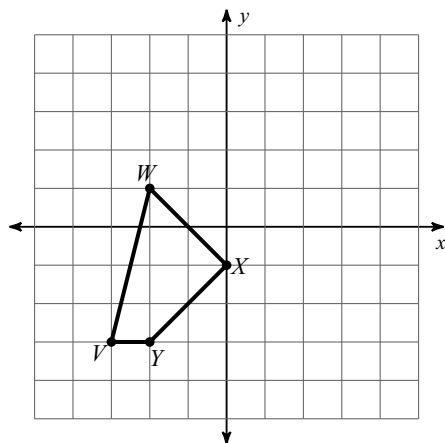


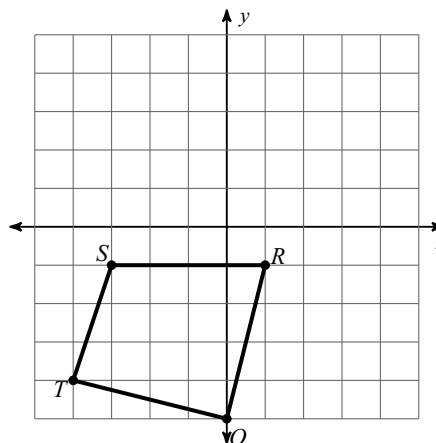
1-1 Translations

Graph the image of the figure using the transformation given.

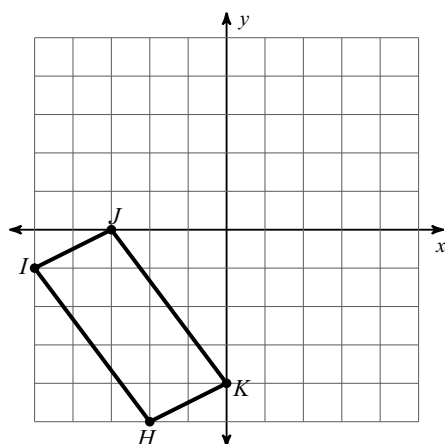
1) translation: 1 unit left and 3 units up



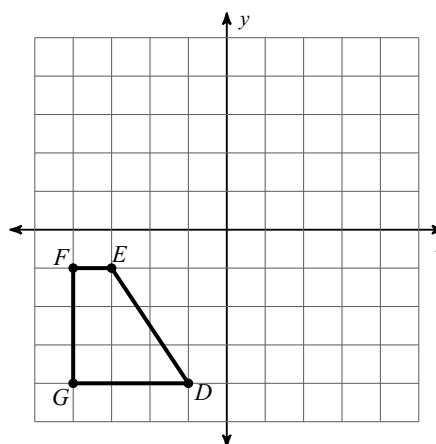
2) translation: 2 units right and 6 units up



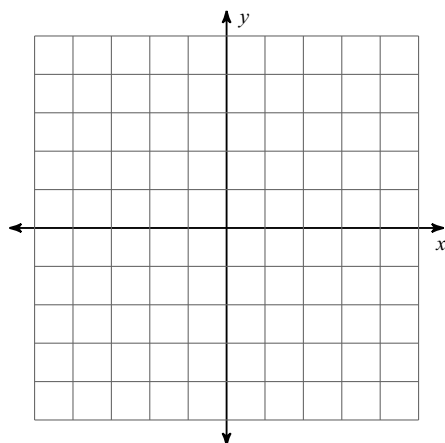
3) translation: $(x, y) \rightarrow (x + 1, y + 2)$



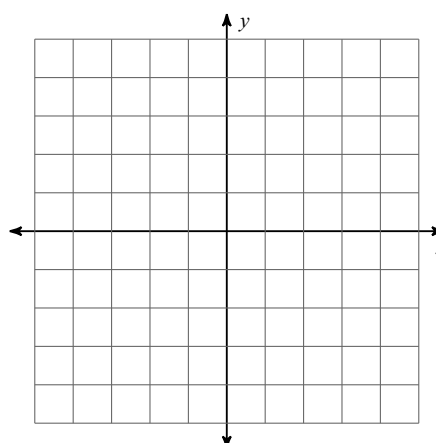
4) translation: $(x, y) \rightarrow (x + 1, y)$



5) translation: 6 units right and 8 units up
 $W(-2, -5)$

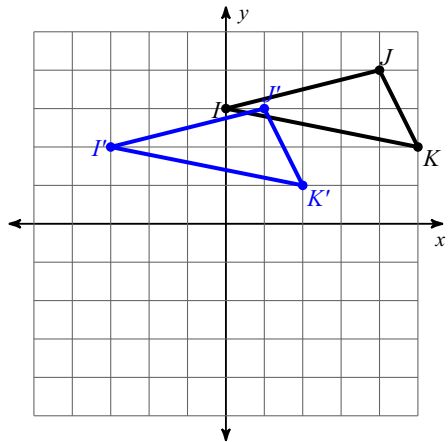


6) translation: $(x, y) \rightarrow (x, y - 7)$
 $J(0, 4)$

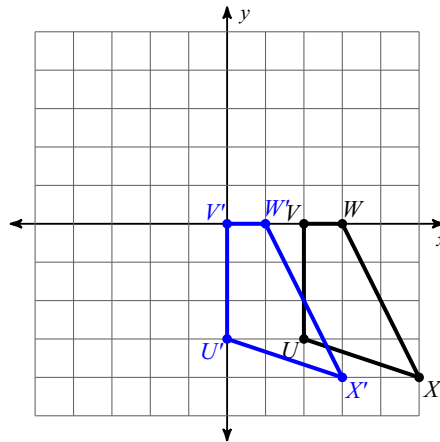


Write a rule to describe each transformation. Use right/left and up/down.

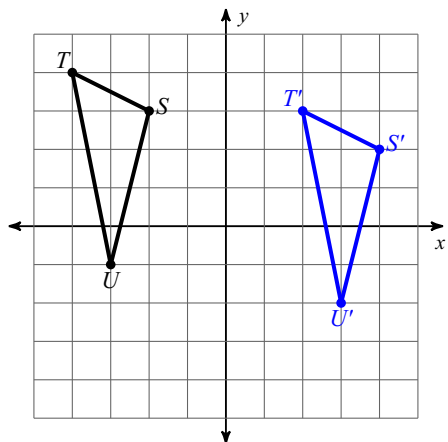
7)



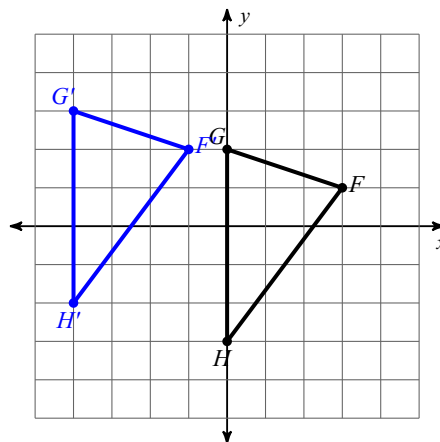
8)



9)



10)



Find the coordinates of the vertices of each figure after the given transformation.

11) translation: $(x, y) \rightarrow (x - 6, y + 5)$
 $J(2, -5), I(3, -2), H(3, -5)$

12) translation: $(x, y) \rightarrow (x + 6, y - 2)$
 $S(-5, 1), R(-1, 4), Q(-4, 0)$

13) translation: 3 units up
 $W(-4, -4), X(0, -1), Y(0, -5)$

14) translation: 1 unit right
 $J(-1, 0), K(3, 3), L(1, -2)$