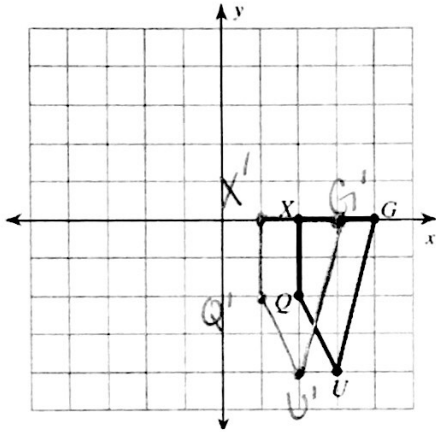


Translations HW

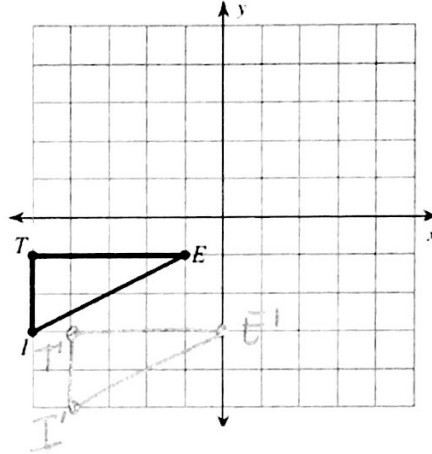
Name: Key

Graph the image of the figure using the transformation given.

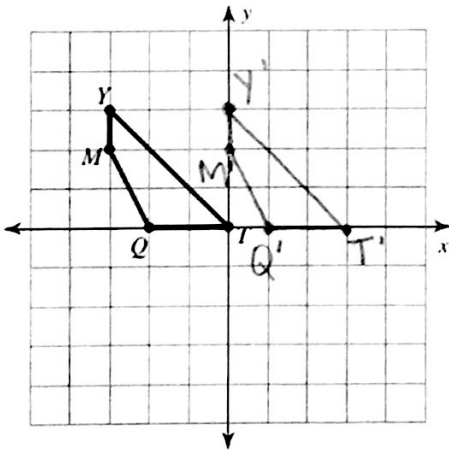
1) translation: 1 unit left



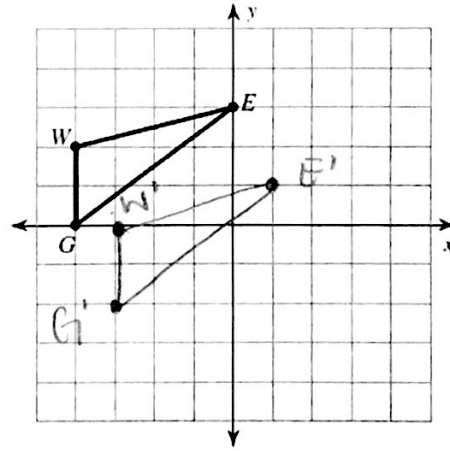
2) translation: 1 unit right and 2 units down



3) translation: 3 units right

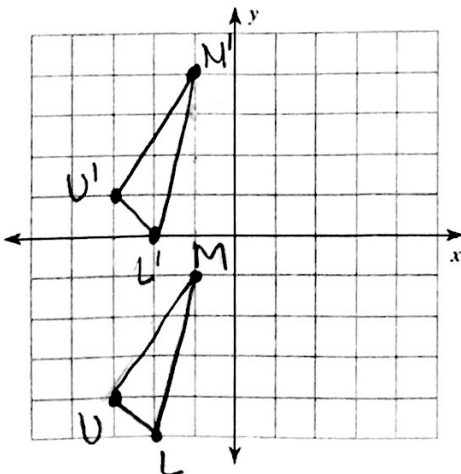


4) translation: 1 unit right and 2 units down



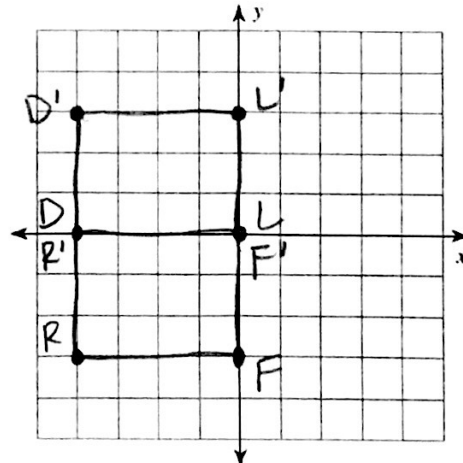
5) translation: 5 units up

$U(-3, -4), M(-1, -1), L(-2, -5)$



6) translation: 3 units up

$R(-4, -3), D(-4, 0), L(0, 0), F(0, -3)$



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

- 7) translation: 2 units left and 1 unit down
 $Q(0, -1), D(-2, 2), V(2, 4), J(3, 0)$

$$Q'(-2, -2) \quad D'(-4, 1) \quad V'(0, 3) \quad J'(1, -1)$$

- 9) translation: 4 units left and 4 units up
 $J(-1, -2), A(-1, 0), N(3, -3)$

$$J'(-5, 2) \quad A'(-5, 4) \quad N'(-1, 1)$$

- 8) translation: 2 units down
 $D(-4, 1), A(-2, 5), S(-1, 4), N(-1, 2)$

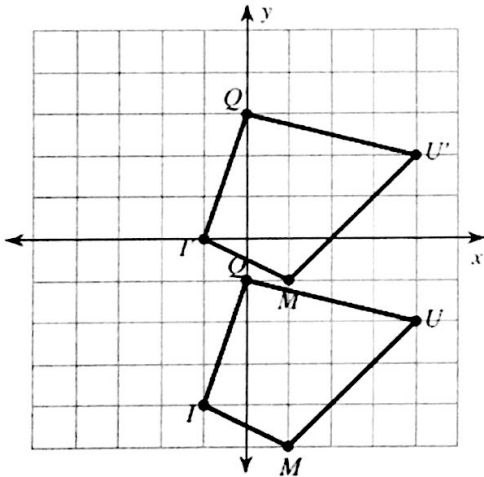
$$D'(-4, -1) \quad A'(-2, 3) \quad S'(-1, 2) \quad N'(-1, 0)$$

- 10) translation: 3 units right and 4 units up
 $Z(-4, -3), I(-2, -2), V(-2, -4)$

$$Z'(-1, 1) \quad I'(1, 2) \quad V'(1, 0)$$

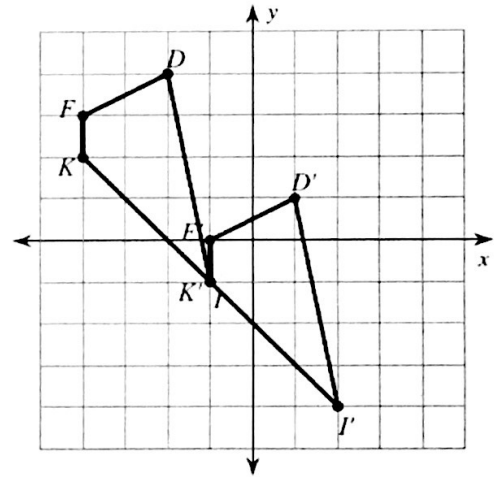
Write a rule to describe each transformation.

11)



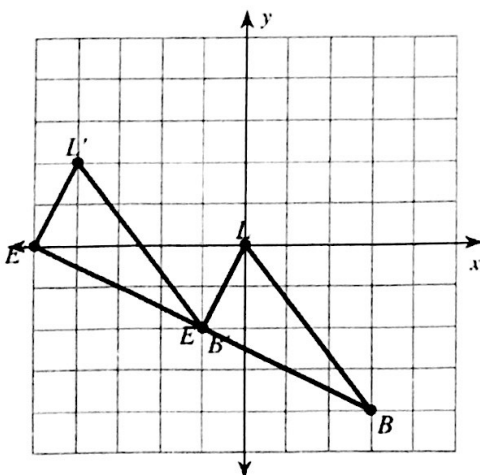
$$(x, y) \rightarrow (x, y + 4)$$

12)



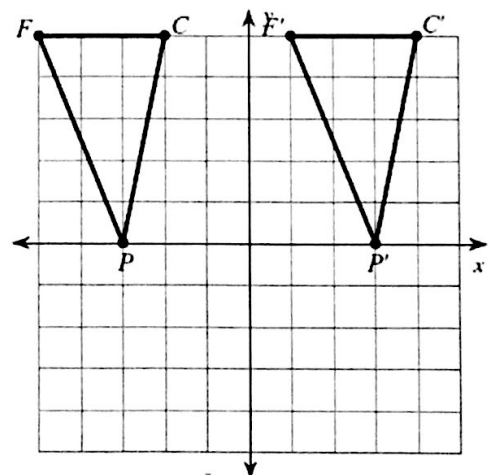
$$(x, y) \rightarrow (x + 3, y - 3)$$

13)



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

14)



$$(x, y) \rightarrow (x - 6, y)$$