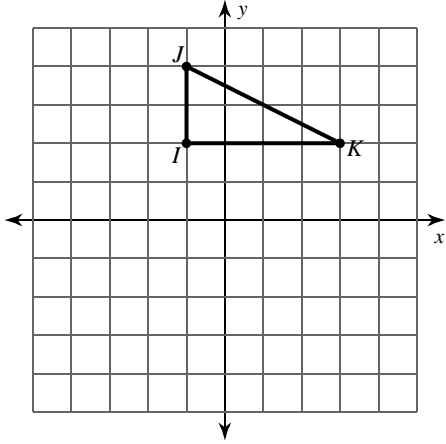


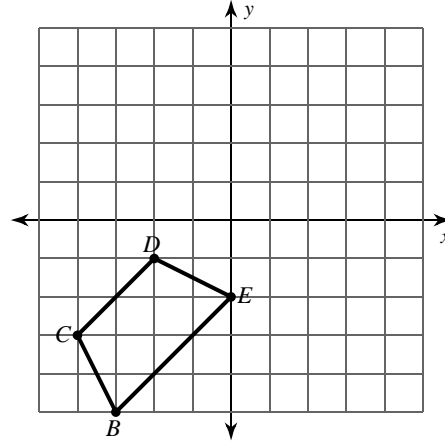
Translations

Graph the image of the figure using the transformation given.

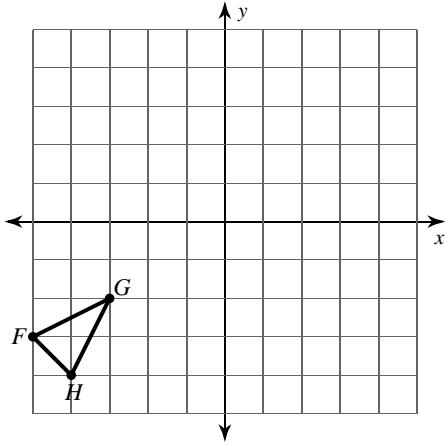
1) translation: 4 units left and 7 units down



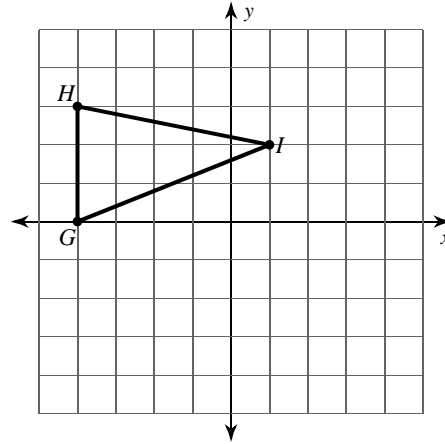
2) translation: 2 units up



3) translation: 2 units right and 1 unit down

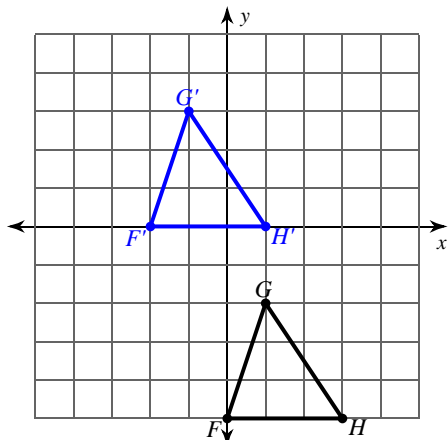


4) translation: 5 units down

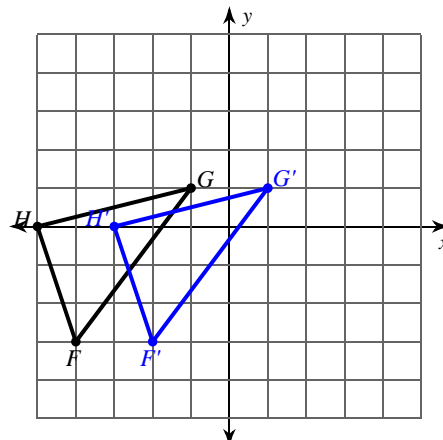


Write a rule to describe each transformation. Write it in both Vector notations and Function Notation

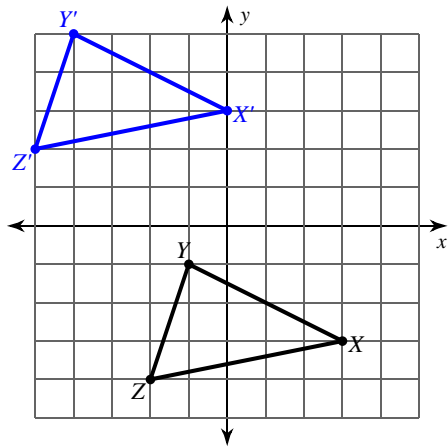
5)



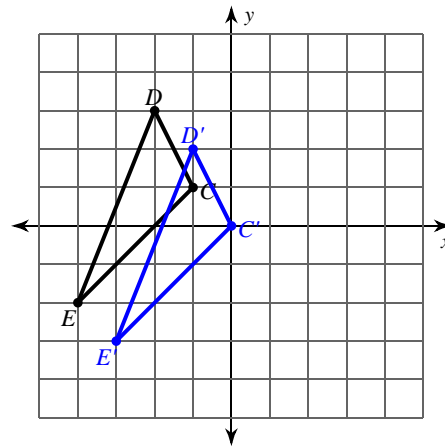
6)



7)



8)



9) $E(-4, -3), F(-1, 1), G(1, -3)$
to
 $E'(-3, -2), F'(0, 2), G'(2, -2)$

10) $C(-3, 2), D(-3, 4), E(1, 5)$
to
 $C'(-3, -5), D'(-3, -3), E'(1, -2)$

11) $Z(-4, 1), Y(-5, 3), X(-4, 4), W(-2, 5)$
to
 $Z'(2, -5), Y'(1, -3), X'(2, -2), W'(4, -1)$

12) $U(2, 0), T(2, 3), S(3, 3)$
to
 $U'(4, -3), T'(4, 0), S'(5, 0)$

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

13) translation: $(x, y) \rightarrow (x + 5, y + 6)$
 $T(-5, -4), U(-2, -3), V(-3, -5)$

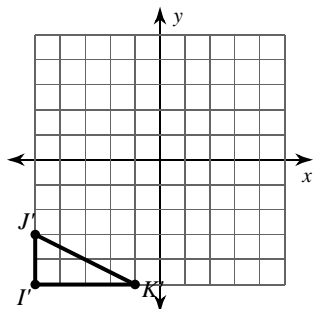
14) translation: $(x, y) \rightarrow (x + 5, y + 1)$
 $S(-4, -3), T(-3, 0), U(-2, -5)$

15) translation: $(x, y) \rightarrow (x + 1, y - 4)$
 $U(-2, -1), V(-2, 3), W(3, 1)$

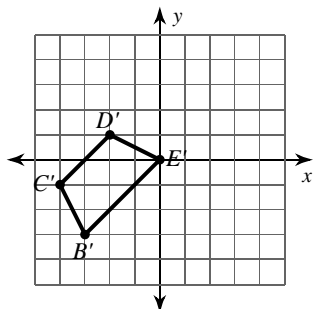
16) translation: $(x, y) \rightarrow (x - 1, y - 5)$
 $A(-4, 2), B(-1, 4), C(0, 1)$

Answers to Translations

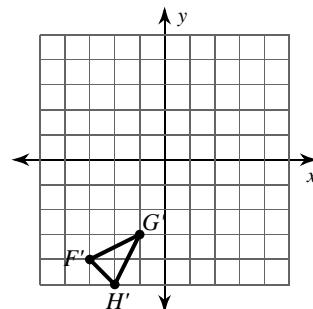
1)



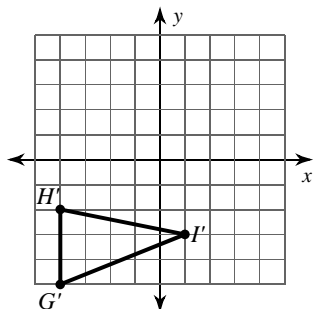
2)



3)



4)



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

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

7) translation: $(x, y) \rightarrow (x - 3, y + 6)$

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

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

10) translation: $(x, y) \rightarrow (x, y - 7)$

11) translation: $(x, y) \rightarrow (x + 6, y - 6)$

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

13) $T(0, 2), U(3, 3), V(2, 1)$

14) $S(1, -2), T(2, 1), U(3, -4)$ 15) $U(-1, -5), V(-1, -1), W(4, -3)$

16) $A(-5, -3), B(-2, -1), C(-1, -4)$