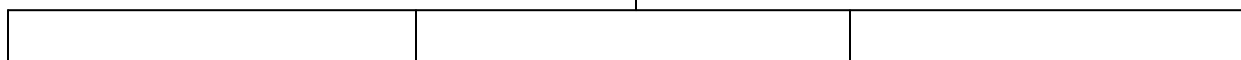




Translations (page 1)

A transformation is a change made to the location or to the size of a figure, resulting in a new figure, called the image.

Transformations



I. Describe the translation in four words (left or right how many, and up or down how many) then write the translation algebraically.

1. Words: _____

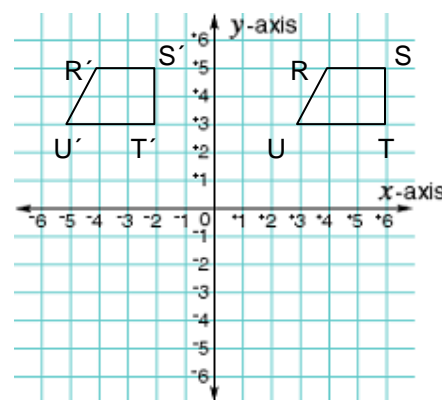
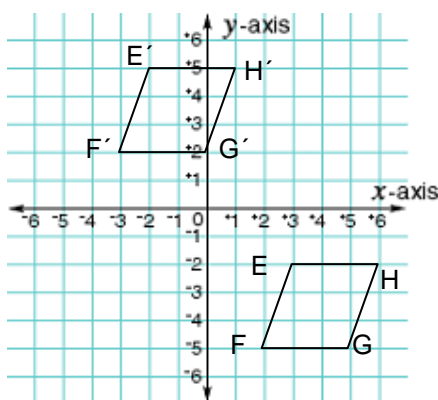
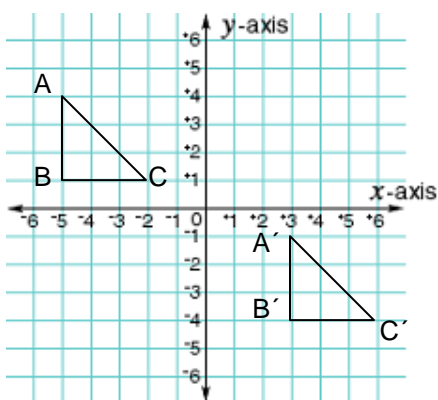
2. Words: _____

3. Words: _____

Algebra: $(x, y) \rightarrow (\quad , \quad)$

Algebra: $(x, y) \rightarrow (\quad , \quad)$

Algebra: $(x, y) \rightarrow (\quad , \quad)$



II. Describe the translation in four words (left or right how many and up or down how many).

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

2. $(x, y) \rightarrow (x - 2, y + 6)$

III. Complete each part of the question.

a. Draw $\triangle ABC$ with vertices $A(-1, -4)$, $B(-2, 4)$, and $C(3, -2)$.

b. Describe the translation $(x, y) \rightarrow (x - 2, y - 1)$ in four words: _____

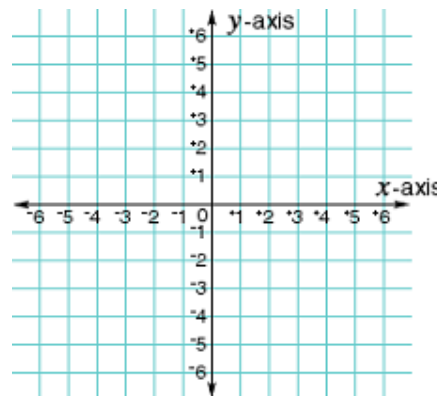
c. Find the coordinates

$A'(\quad , \quad)$

$B'(\quad , \quad)$

$C'(\quad , \quad)$

d. Draw and label the image $\triangle A'B'C'$.



Translations (page 2)

1. Describe a translation in one word:

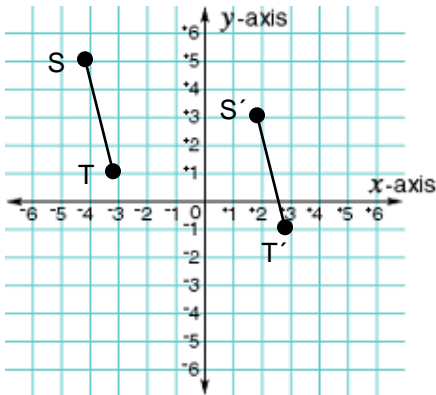
2. Describe the translation in four words.

$$(x, y) \rightarrow (x - 5, y + 3)$$

3.

a. Describe the translation in four words.

b. Write the translation algebraically.



4.

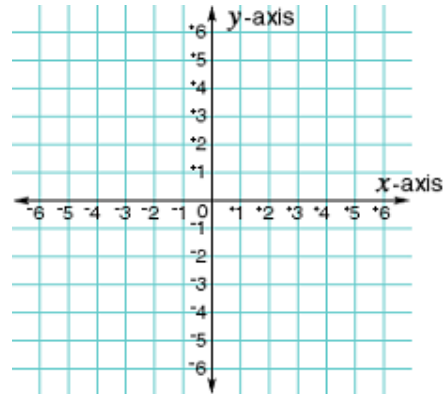
a. Draw $\triangle DEF$ with vertices:
D(1, 2), E(3, 4), and F(5, 1).

b. Find the coordinates:

$$D'(\quad, \quad) \quad E'(\quad, \quad) \quad F'(\quad, \quad)$$

after the translation $(x, y) \rightarrow (x - 3, y + 2)$

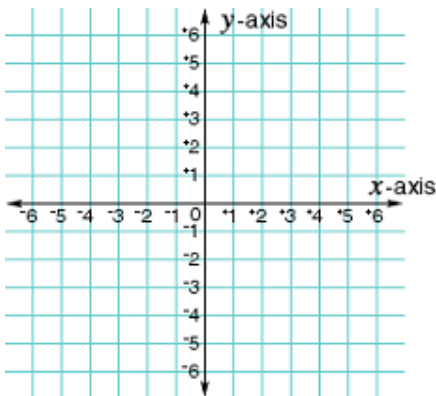
c. Draw the image $\triangle D'E'F'$.



5.

You translate a figure using $(x, y) \rightarrow (x - 3, y - 4)$.
Then you translate using $(x, y) \rightarrow (x + 2, y - 6)$.
If you switch the order of the translations, is the final image the same? Justify your answer with an example.

(Hint: Draw a point in Quadrant I and use it as an example.)



6. CHALLENGE:

Given points A(4, 3) and B(8, 7),
use coordinate notation to describe
a translation from A to the midpoint of \overline{AB} .