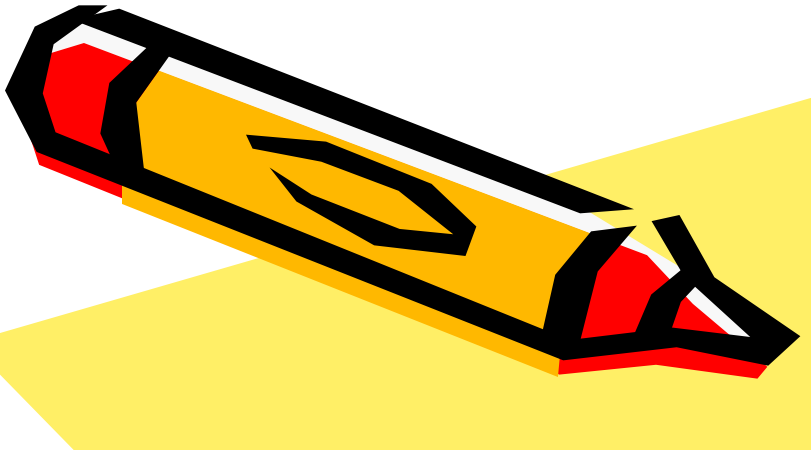
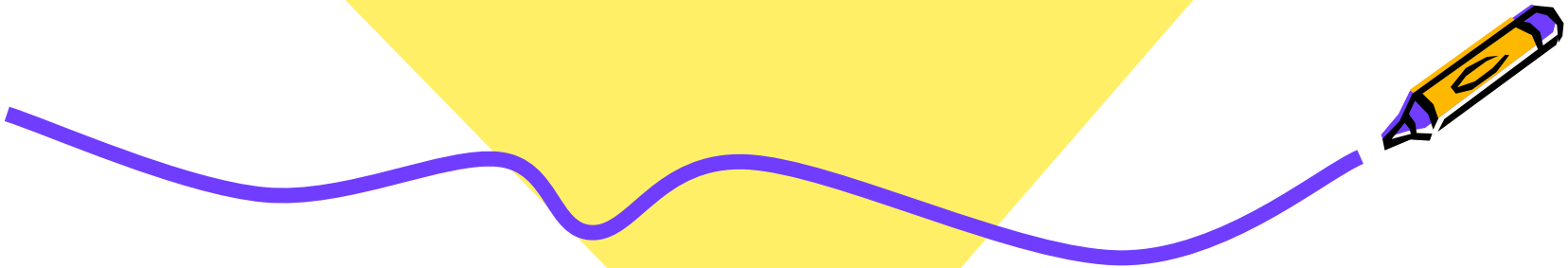
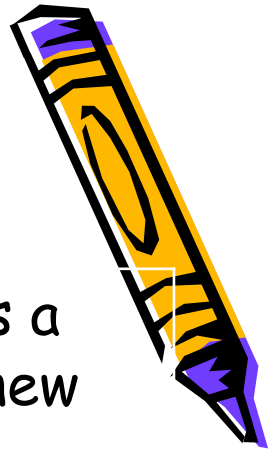


Geometry

Translations



Vocabulary



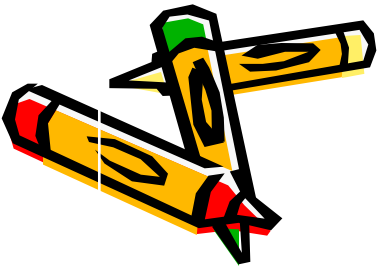
Transformation

A function that moves or changes a figure in some way to produce a new image.

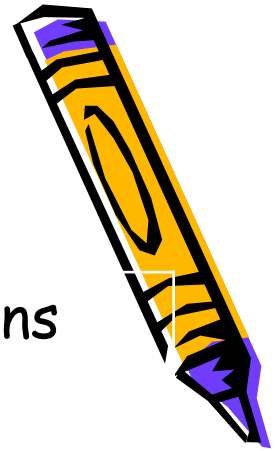
The images are commonly referred to using the terms such as pre-image, image, or post-image.

Prime Notation

P′ (P prime) refers to point P after the transformation. P′ is the result of applying a transformation rule to point P. P″ is the result of transforming P′, and so on. Sometimes exponential notation is used as well (P^3, P^4, etc.)



Vocabulary



Composition — When two or more transformations are combined in a specific order.

Rigid Motion — Any transformation that maintains congruence.

Translation

Translation

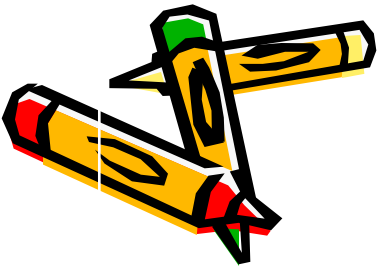
Previously referred to as a 'slide'.

A Translation moves every point of a figure the same distance and direction.

Notation examples to translate an image 2 units right and 4 units up:

Map/rule: (x, y) -> (x+2, y+4)

Vector: <2, 4>



Vector notation indicates direction and magnitude of both the x and y components.

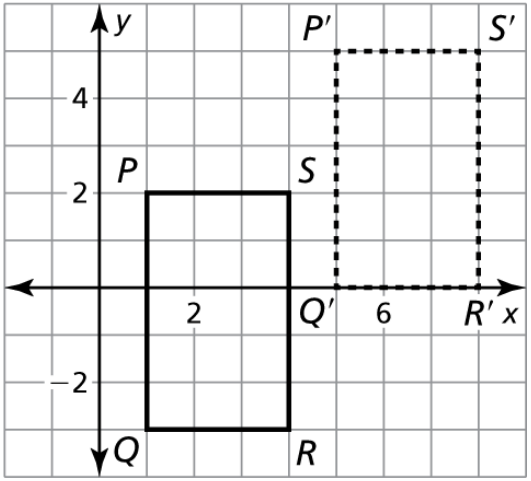
Translation

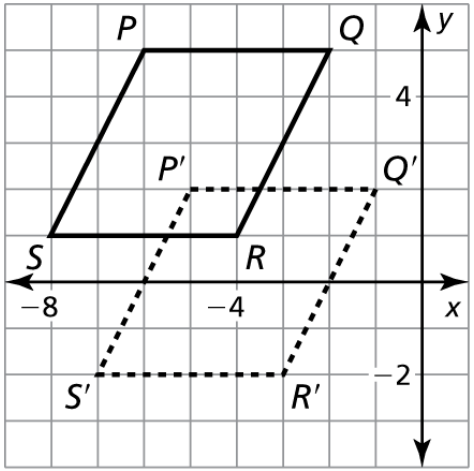
https://www.youtube.com/watch?v=j87gj_KH9pA

Animated video about Translations

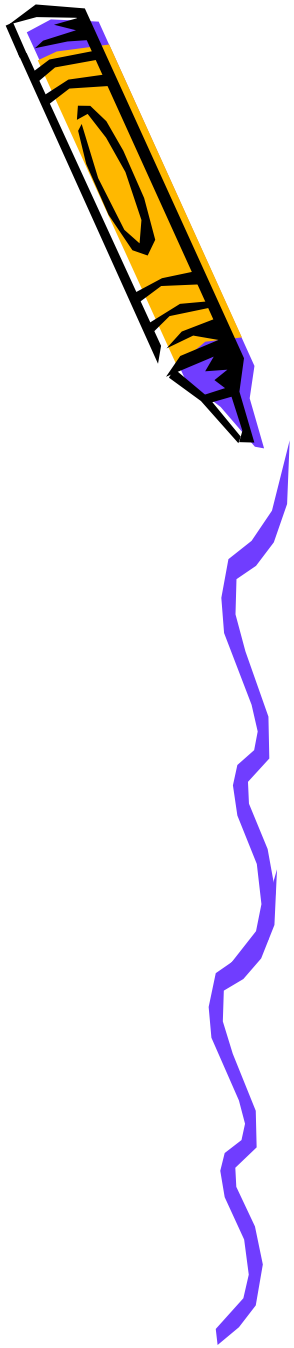
Translation

Write a rule for the translation of quadrilateral PQRS to quadrilateral P'Q'R'S'





Translation



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

What is the post-image of J(4, 5)?

What is the pre-image of R'(0, -5)?

Translation

The vertices of ΔABC are A(1, 2), B(5, 1), c(5, 4)
Translate ΔABC using the given vector <-2, -4>.
Graph ΔABC and its image.
(Note the scale on the coordinate plane below.)