

VOCAB

Transformations

Congruent figures Same shape and same size

When two figures are congruent, you can move one so that they will lie on top of one another

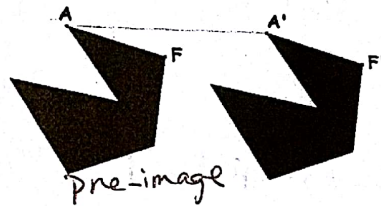
Transformation of a geometric figure: change in its position, size, or direction

Preimage - original figure

Notation: A

Image - new or transformed figure

Notation: A' "A prime"



Isometry - transformation in which preimage and image are the same size and shape (also called: rigid motion)

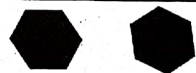
Examples:



Translation
(or reflection)



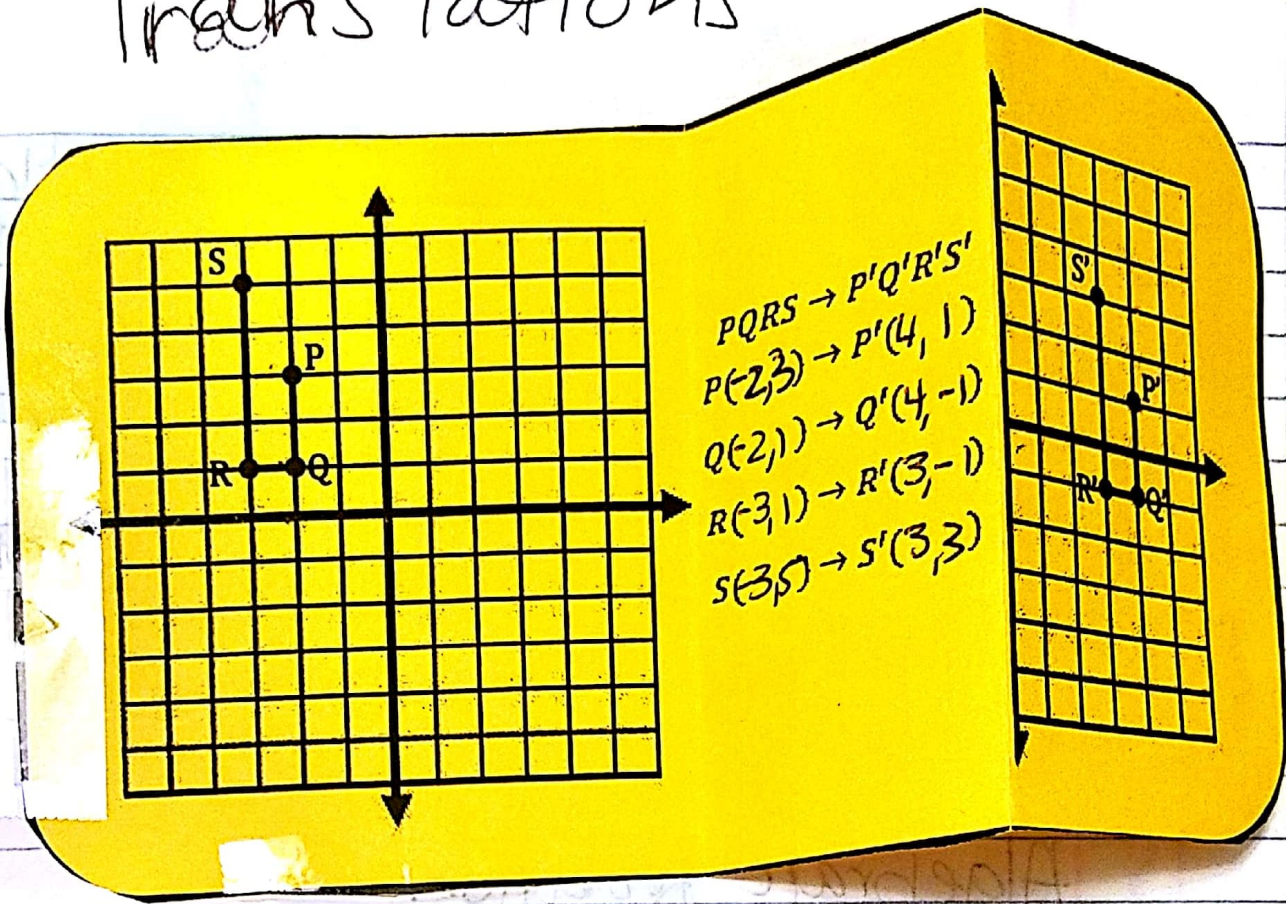
Reflection, and



Rotation

Translation - an isometry that maps all points the same distance and the same direction

Translations



preimage \rightarrow translation

X: Right
or
left

Y: UP
or
down

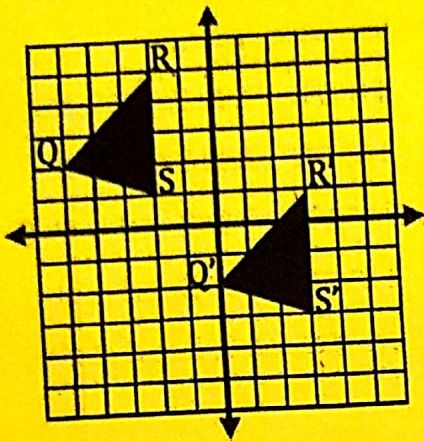
$$(x, y) \rightarrow (x + 6, y - 2)$$

Algebraic Notation

"Algebraic Rule"

Vector Rule: $\langle 6, -2 \rangle$

Right 6, Down 2



Describe a translation that maps ΔQRS to $\Delta Q'R'S'$

Right 5
Down 4

Algebraic Rule:

$$(x, y) \rightarrow$$

$$(x+5, y-4)$$

Vector Rule:
 $\langle 5, -4 \rangle$

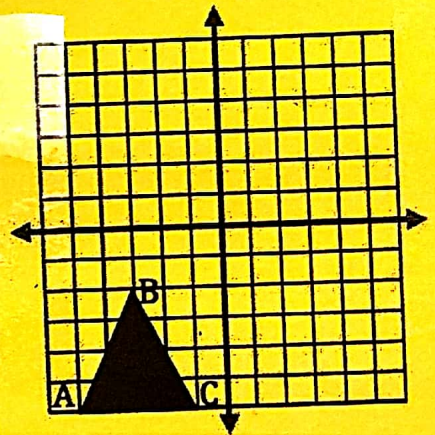
Algebraic Notation:

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

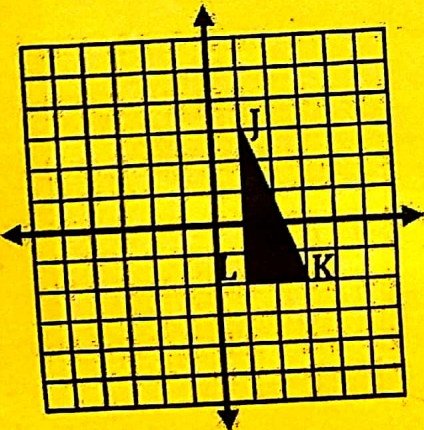
Vector Rule:

$$\langle 5, 3 \rangle$$

Translate ΔABC right 5 units and up 3 units.



Translate ΔJKL left 3 units and up 4 units.



Algebraic Rule:

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

Vector Rule:

$$\langle -3, 4 \rangle$$