Translations:

* A transformation that moves all points of a figure the same distance in the same direction.

* Informal name is a slide.

* One way to show a translations is:

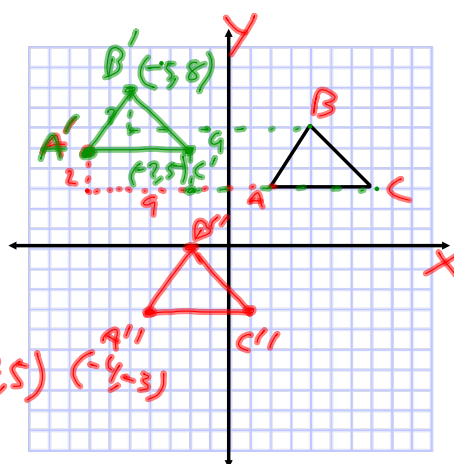Pre-image   image

(x, y) ➡ (x + a, y + b)

Translations will preserve angle measure, betweenness, collinearity, and distance.

TRANSLATIONS ALSO PRESERVE ORIENTATION!

Ex 1) Triangle ABC has vertices
A(2,3), B(4, 6), and C(7,3).

a.) Label Triangle ABC and find it's image for the translation (x,y) --> (x-9, y+2) and label it A'B'C'.

$A(2,3) \rightarrow A'(2-9, 3+2) = A'(-7,5)$ $(-4,-3)$

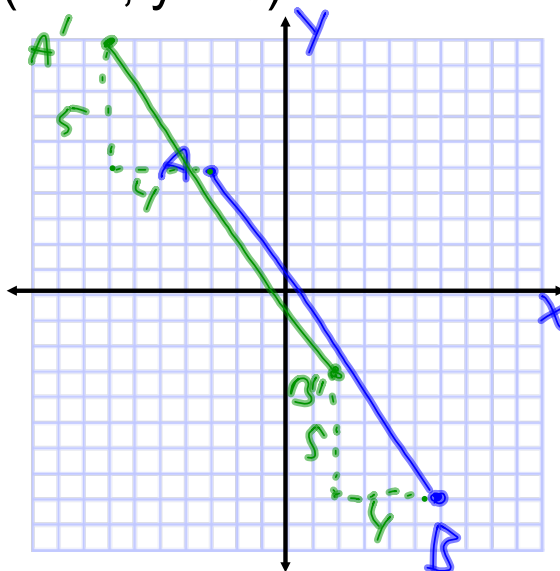b. Using A'B'C', graph A", B", C" for the translation
(x,y) --> (x+3, y-8)

$A'(-7,5) \rightarrow A''(-7+3, 5-8) = A''(-4, -3)$

$B'(-5,8) \rightarrow B''(-5+3, 8-8) = B''(-2, 0)$

$C'(-2,5) \rightarrow C''(-2+3, 5-8) = C''(1, -3)$

Ex 2) Segment AB has vertices A (-3, 5) and B (6, -8). What is the image under a translation of (x, y) $\longrightarrow$ (x - 4, y + 5).

4 to the left
5 up

Translations (continued):

* A result of 2 reflections in the same
  direction. (Composition of reflections.)

* The two reflections are over parallel
  lines.

* Translations are another isometry.

Ex 3) In the figure, lines p and q are parallel. Determine whether the
red figure (E"F"G"H") is a translation image of the blue pre-image
(EFGH).