

Transformations

create an image like $\triangle ABC \rightarrow \triangle A'B'C'$

Rigid Transformations

preserve distance and angle (congruent)

also called **isometry**

Non-rigid transformation

does not preserve shape & size (angle & distance)

Translation

is

a rigid transformation where all points move the same distance in the same direction

Key words: translation vector, distance, direction

~~Reflection~~
Connected original and image points make parallel paths.
The figures are congruent.
Preserves orientation.
 $(x, y) \rightarrow (x+2, y-3)$
or $\langle 2, -3 \rangle$
means move right 2, down 3

Rotation

is

a rigid transformation where all the points rotate (turn) a specific # of degrees around a center point

Key words: degrees, center of rotation, clockwise, counterclockwise

They are congruent.
Preserves orientation.

Reflections

is

a rigid transformation where all the points move across a line the same distance that they are from the line.

Key words: line of reflection, symmetry (mirror image)

Reflected figures are congruent.
Lines connecting original & image points are parallel and the line of symmetry \perp bisects those parallel segments.
Does not preserve orientation, has opposite orientation.
(Clockwise becomes counterclockwise)