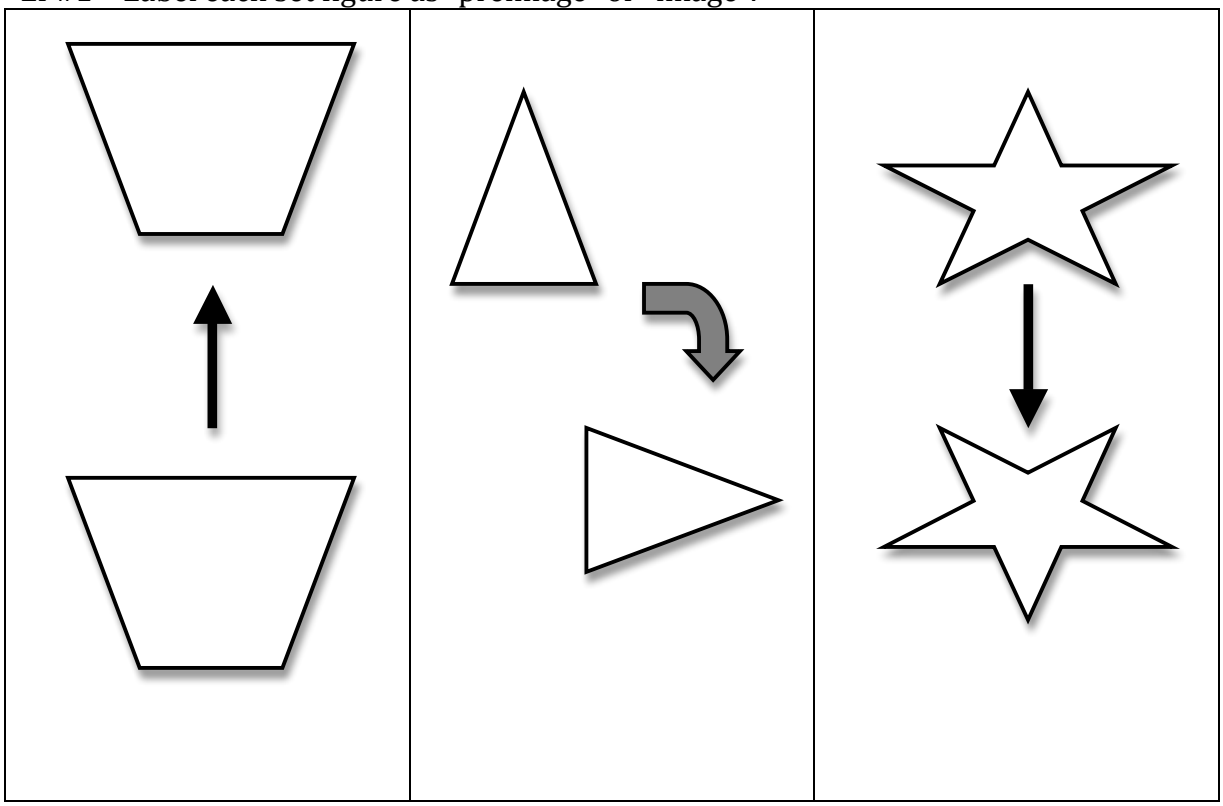
8-1 Introduction to Transformations

A transformation is _____.

A preimage is _____.

An image is _____.

LP#1 – Label each set figure as “preimage” or “image”.



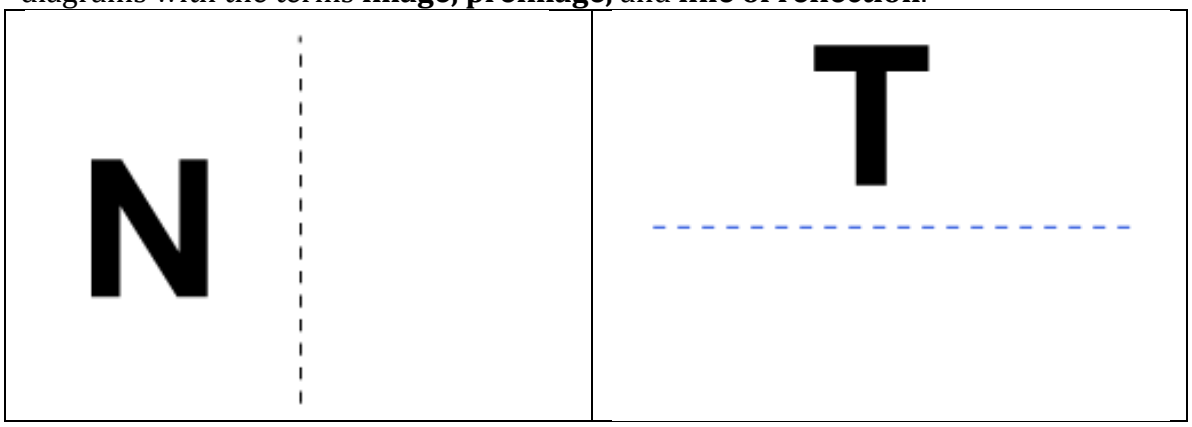
Three transformations that we will learn about in this lesson will move an object’s position. The transformations are **reflection, translation,** and **rotation**. Using a pencil, label the diagrams above using one of the three bolded transformation terms in the prior sentence.

For the following notes you will need a mobile device or a computer that is able to use Flash. Go to http://www.misterteacher.com/abc.html

Reflections

Click on the link labeled (Reflection) to complete the following.

LP#2 – Draw the image's final position as shown in the mini-movie. Label the diagrams with the terms **image, preimage,** and **line of reflection**.

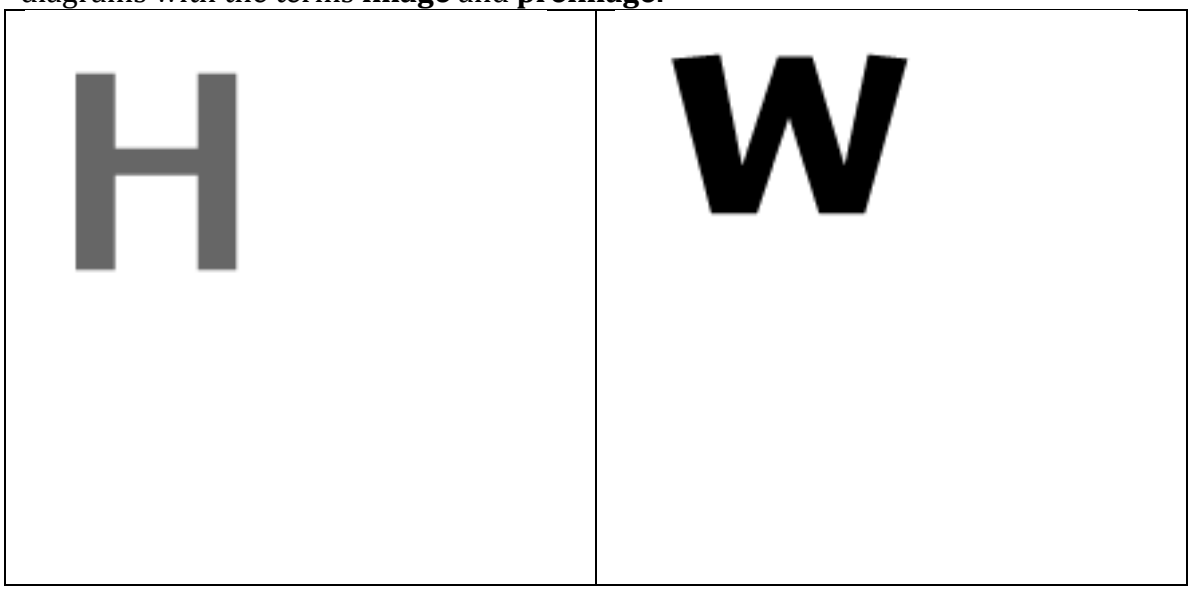


A word that describes a reflection is _____.

Translation

Click on the link labeled (Translation) to complete the following.

LP#3 – Draw the image's final position as shown in the mini-movie. Label the diagrams with the terms **image** and **preimage.**



Rotation

Click on the link labeled (Rotation) to complete the following.

LP#3 – Draw the image's final position as shown in the mini-movie. Label the diagrams with the terms **image** and **preimage.**

LP #4 – For each letter translate it, reflect it, then rotate.

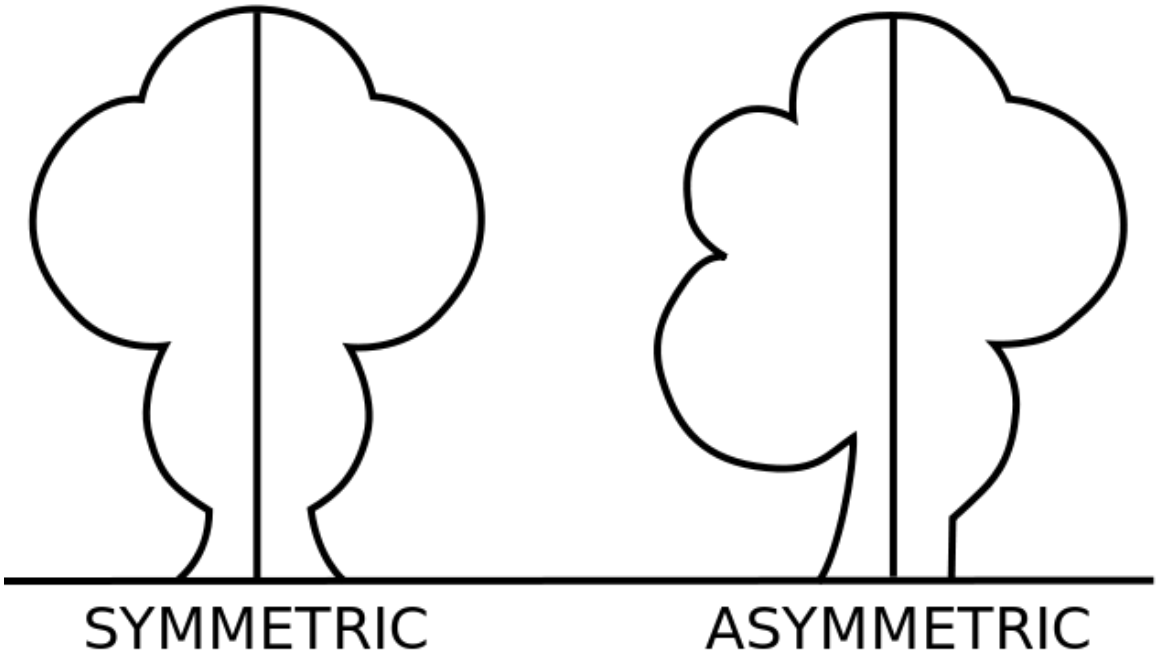
B
E
K
M

P

LP#5 – Rotate the following letters four times. Each time complete a 90 degree counterclockwise rotation, until you complete a 360 degree rotation. Show each image after each rotation.

T
W
Q
Y
C

Symmetry



For the next set of exercises, use the Alphabet Symmetry Tool at the bottom of the web page at the address:

www.misterteacher.com/alphabetgeometry/reflection.html

LP#4 – For each of the letters below, check all the symmetries that apply. State the amount of degrees for any rotational symmetries under 360 degrees. State vertical or horizontal for any line symmetries.

A	[ ] Rotational Symmetry	[ ] Line Symmetry
C	[ ] Rotational Symmetry	[ ] Line Symmetry
H	[ ] Rotational Symmetry	[ ] Line Symmetry
N	[ ] Rotational Symmetry	[ ] Line Symmetry

S	[ ] Rotational Symmetry	[ ] Line Symmetry
X	[ ] Rotational Symmetry	[ ] Line Symmetry
Z	[ ] Rotational Symmetry	[ ] Line Symmetry
Star	[ ] Rotational Symmetry	[ ] Line Symmetry
Logo	[ ] Rotational Symmetry	[ ] Line Symmetry

Homework

1. Go through the rest of the alphabet. State any other letter that has rotational symmetry (under 360 degrees) and/or line symmetry. State the number of degrees for each rotational symmetry and state "vertical" or "horizontal" for each line symmetry.

2. Can you find any words with rotational or line symmetry? State the words and state the type of symmetry each have. Find at least five words.