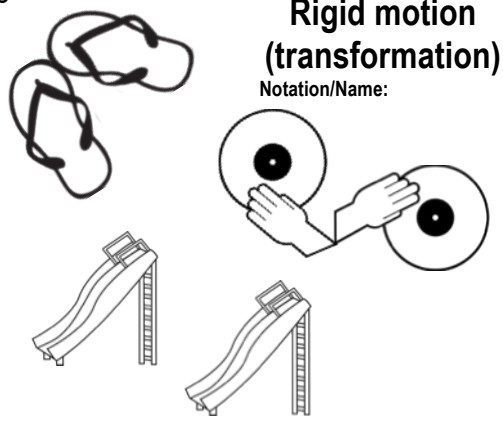
Diagram

Term

Rigid motion (transformation)



Notation/Name:

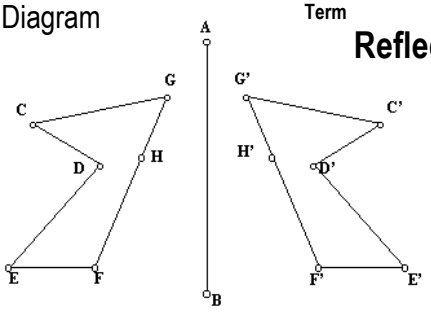
Description:

A transformation of the plane is a function that assigns to each point P of the plane a unique point $F(P)$ in the plane. Rigid motions are transformations that preserve _____ of segments and _____ of angles. A dilation is an example of a transformation that preserves _____ measures but not the lengths of segments. In this lesson, we will work only with rigid transformations. We call a figure that is about to undergo a transformation the _____ while the figure that results from the transformation is called the _____.

Diagram

Term

Reflection



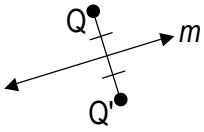
Notation/Name:

Description:

Reflections are **rigid motion functions** of the plane such that:

(a) Any point P on the line of the reflection maps to _____ (P' = P)

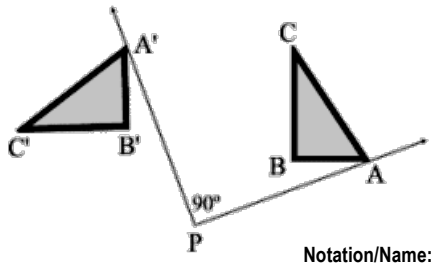
(b) Any point Q not on the line of reflection maps to Q' such that the line of reflection is the _____ _____ of $\overline{QQ'}$. Notation: $r_m(Q)$ means reflect Q across line *m*.



Diagram

Term

Rotation



Notation/Name:

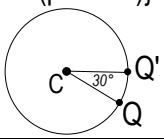
Description:

Reflections are **rigid motion functions** of the plane around a center point C such that:

(a) The center of rotation, point C, maps to _____ (C' = C)

(b) Any point Q that is not the center of rotation maps to a point Q' on _____ C with _____ CQ such that $m\angle QCQ'$ is equal to the degree of the rotation. {which includes direction --clockwise (negative) or counterclockwise (positive)}

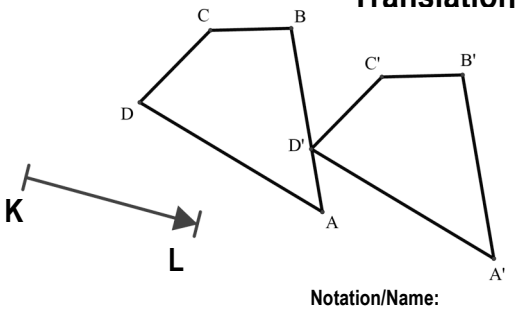
Notation: $R_{C,30°}(Q)$ means rotate point Q 30° counterclockwise around point C.



Diagram

Term

Translation



Notation/Name:

Description:

Translations are **rigid motion** *functions* of the plane along a vector (path) with distance and direction such that:

(a) any point P on the line containing the vector maps to a point P' on the line so that PP' has the same distance and direction as the given vector

(b) any point Q not on the line containing the vector maps to a point Q' so that QQ' is on a line parallel to the line containing the vector and QQ' is the length and direction of the given vector on a line parallel to the given vector.

Notation: $T_{\overrightarrow{AB}}(Q)$