Isometry

A function from  onto that preserves distance.

Opposite isometry

An isometry that reverses orientation (in ,

reflection or glide-reflection)

Symmetry Group of a Figure in 

Let *F* be a set of points in .

The set of isometries of that carry *F* onto itself.

Glide-reflection

The product of a translation and a reflection across the line that contains the translation vector.

Finite Symmetry Groups in the Plane

The only finite plane symmetry groups are  and .

Finite Groups of Rotations in 

Up to isomorphism, the finite groups of rotations in  are , and .

Discrete frieze group

A plane symmetry group of a pattern whose subgroup of translations is isomorphic to *Z*.

Trivial glide-reflection

A glide-reflection whose translation and reflection components are elements of the symmetry group.

Nontrivial glide-reflection

A glide-reflection whose translation and reflection components are not elements of the symmetry group.

Plane crystallographic group

a.k.a.

Wallpaper group

A discrete plane symmetry group whose subgroup of translations is .

Lattice of points

The set of images of any particular point acted on by the translation group of the pattern.

Lattice unit

Pertains to a pattern whose translation subgroup is generated by vectors *u* and *v*.

A parallelogram formed by a point of the pattern and its images under *u*, *v*, and *u+v*.

Generating region or fundamental region

The smallest portion of the lattice unit whose images under the full symmetry group of the pattern cover the plane.

Crystallographic restriction

The fact that the only possible *n*-fold rotational symmetries for plane periodic patterns are 1-, 2-, 3-, 4-, and 6-fold.

Space group

A three-dimensional crystallographic group.