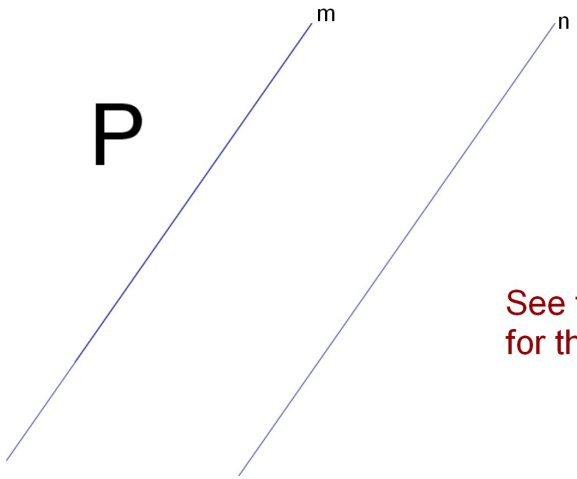
Write this statement as a conditional: Cats are fury.

If It's a cat, then its fury

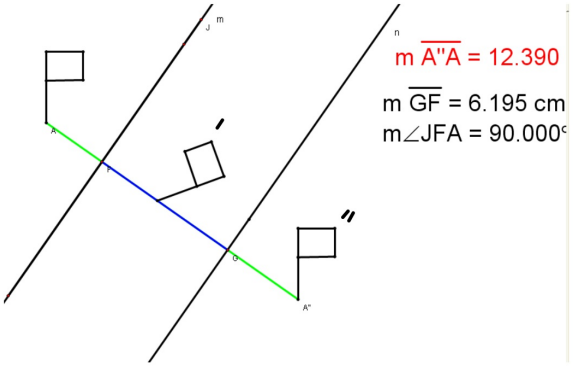
W

1. Use a Mira to reflect P over line m to get P'
2. Now reflect P' over line n to get P''
3. Reflecting over a pair of parallel lines is the same as what other transformation?

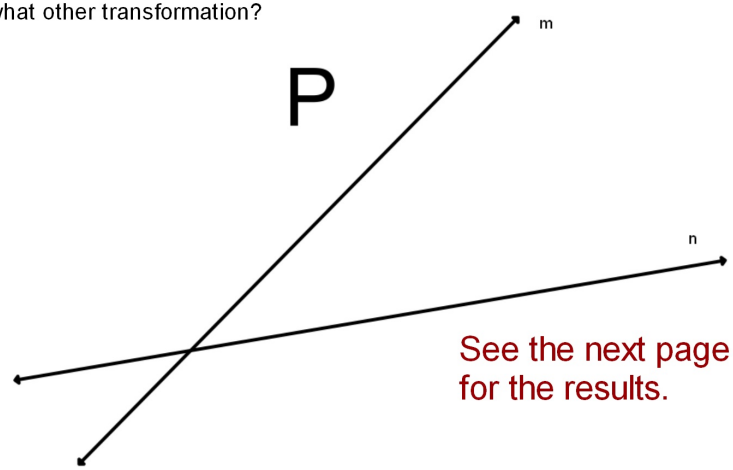


See the next page for the results.

- a double reflection over parallel lines is the same as a translation.
- The distance between the second image and the preimage is twice the distance between the parallel lines.
- The angle formed by the parallel lines and the line connecting corresponding points on the second image and the preimage is a right angle.

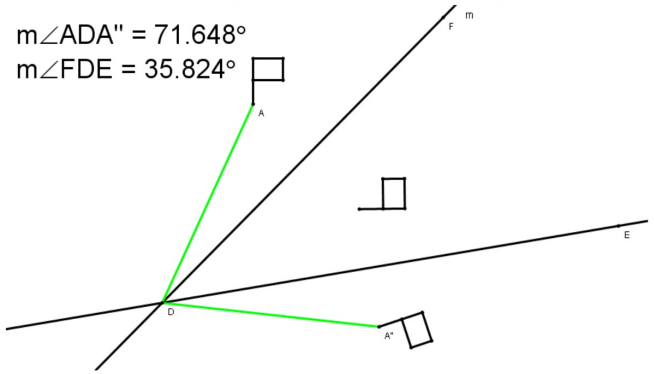


1. Use a Mira to reflect P over line m to get P'
2. Now reflect P' over line n to get P''
3. Reflecting over a pair of intersecting lines is the same as what other transformation?



See the next page for the results.

- The double reflection over intersecting lines is the same as a rotation.
- The center of rotation is the point where the two reflecting lines intersect.
- The angle formed by lines connecting corresponding points with the point of intersection is twice the angle formed by the intersecting lines of reflection.



Plot these points to make triangle ABC.

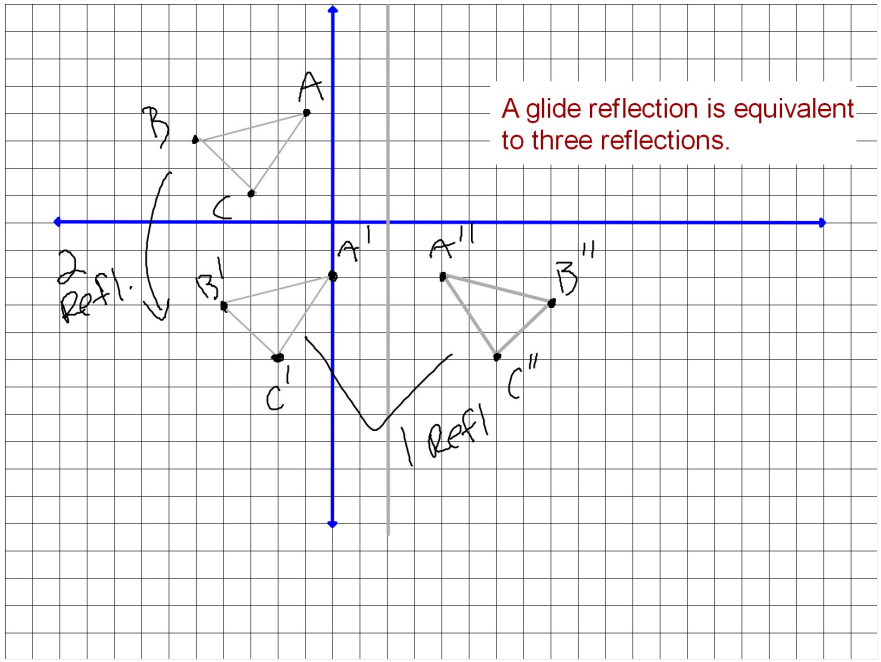
A(-1, 4) B(-5,3) C(-3,1)

1. Now translate triangle ABC using this rule to make triangle A'B'C': (x,y) (x+1, y-6)

2. Reflect triangle A'B'C' over the line x = 2

The final result is called a Glide Reflection.

See the next page for the results.



This is an example of a glide reflection.

A glide reflection is a composition of a translation and a reflection.

A translation is really the composition of how many reflections?

two

Since a translation is really a composition of two reflections, then a glide reflection is really the same as doing how many reflections on the original figure?

three

Theorem 9-4 **Fundamental Theorem of Isometries**

In a plane, one of two congruent figures can be mapped onto the other by a composition of at most three reflections.

Isometry:

Transformation for when the preimage and image are congruent figures.