Chapter 4 Glide Reflections Video D

We will specify the transformation in terms of reflections, of course. You need a glide path…a line that is usually given. Then two reflection lines for the glide (aka translation) perpendicular to the glide path. Then, the last reflection, across the glide path. Label the lines A, B, and C with C being the translation pathway and A being the line closest to the initial set of points. Do a reflection 3 times…twice along the path and once across the path. CBA.



The name says it all! Glide (2 reflections across parallel lines) Reflect (across the pathway).

It’s odd, indirect, and orientation reversing. No surprises there. It’s an isometry, a rigid motion in the plane made up of three reflections.

And there’s one wrinkle on commuting. If you take the translation as ONE move, you can translate then reflect across the path OR reflect across the path first then translate.

Now there’s no need to stop with 3 reflections, we could make some moves in the plane with, say, 5 reflections. What would happen? Well the object would move without changing lengths or angle measures and, let’s count:

Reflection 1 (reverse) Reflection 2 (preserve) Reflection 3 (reverse) Reflection 4 (preserve) Reflection 5 (reverse).

And it would end up orientation reversed from the original object.

See how that works? Our 5 reflection thing would be an isometry, a rigid motion in the plane but one without a special name is all.

So now wrapping up on the next page:

**Chapter 4 Popper Question 9**

Would a 13 reflection move be

A. Even

B. Odd

**Chapter 4 Essay 3**

Write a short essay comparing and contrasting Reflection and Glide Reflection.

**Chapter 4 Popper Question 10**

There are other rigid motions in the plane in addition to the ones we’ve studied, they just don’t have special names.

A. True

B. False

**Ms. Leigh Question 3**

Make up a personal rigid motion in the plane by combining at least 2 of the classic ones we’ve studied: reflection, translation, rotation, and glide reflection. Be sure to use something asymmetrical as your initial object.