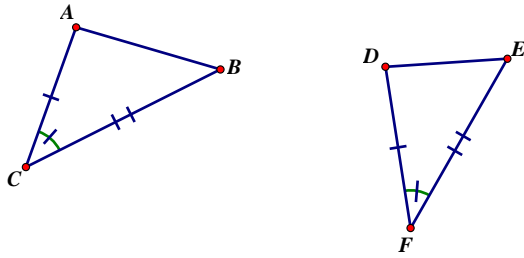1. Given triangles below, define an isometry that maps ΔABC to ΔDEF, matching congruent parts in useful ways as much as possible:


2. Given triangles ΔABC and ΔDEF with congruent angles and sides: $\overline{AC} \cong \overline{DF}$ and $\angle ACB \cong \angle DFE$, define an isometry that maps ΔDEF to ΔABC, matching congruent parts in useful ways as much as possible.

3. Given triangles ΔABC and ΔDEF with congruent angles and sides: $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$ and $\angle ABC \cong \angle DEF$, and an isometry f such that $f(A) = D$, $f(B) \in \overrightarrow{DE}$ and $f(C)$ on the same side of $\overleftrightarrow{DE}$ as F.

Prove that $f(C) = F$ and prove that $\Delta ABC \cong \Delta DEF$

Optional (extra credit): figure out how to find a glide reflection given a start and end such as:
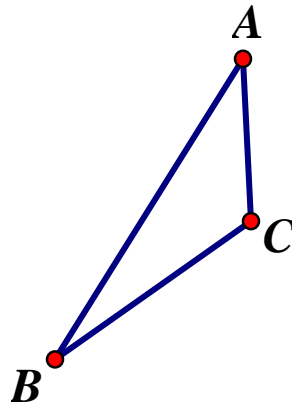
You must be able to explain to someone else how to do this, not just have the end result shown. More extra credit if you can explain why your process works.