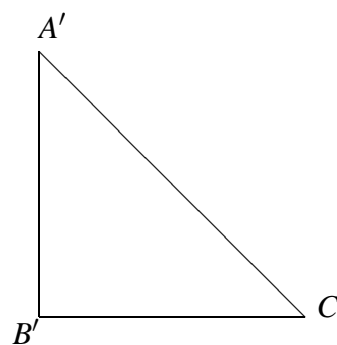
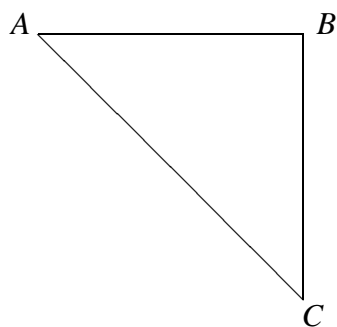
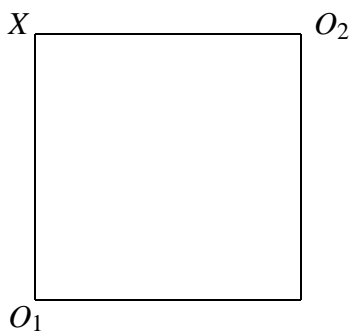


1. Determine what kind of rigid motion is the product of:
 - (a) a half-turn H about a point O and a glide reflection G whose axis of reflection contains O .
 - (b) two half-turns H_1 and H_2 about different points O_1 and O_2 .
 - (c) a half-turn H and a translation T .
 - (d) two reflections R_1 and R_2 about intersecting axes followed by a rotation S about the point of intersection of those axes.
 - (e) the same glide reflection G three times.
 - (f) a 90° clockwise rotation S_1 about O_1 and a 90° clockwise rotation S_2 about O_2 (where $O_1 \neq O_2$).
 - (g) the motion that sends $\triangle ABC$ to $\triangle A'B'C'$ below:



- 1a. It's a reflection because it is opposite and has fixed points (see problem 1, section 4.3).
- 1b. It's a translation because it is direct and has no fixed points (see problem 2, section 4.3).
- 1c. It's a rotation because it is direct and has a fixed point (see problem 3, section 4.3).
- 1d. It's a rotation because it is direct and has a fixed point (the point of intersection is fixed).
- 1e. It's a glide reflection because G^2 is just a translation in the same direction as the "glide" part of G only twice as far.
- 1f. It's a rotation because it is direct and has a fixed point. (X below is fixed.)



- 1g. It's a glide reflection because it is opposite and it can't be a reflection (since $\overline{AA'}$ and $\overline{BB'}$ are not parallel.)