1. Let G be a group and let G° be its *opposite*: As a set $G^\circ = G$. We write g° for the element of G° corresponding to $g \in G$. The multiplication law in G° is[1]

$$g^\circ h^\circ = (hg)^\circ.$$

Prove that, for all groups G, the group G° is isomorphic to G. (Warning: The map $G \to G^\circ$ sending g to g° is not an isomorphism in general!)

[1] Please note: The formula has been corrected. Previously it was written $g^\circ h^\circ = hg$. Thanks to Shen for the correction.