

Lemma. Let $\mathbf{G} = \langle \mathbf{G}, \circ, \text{id}, \text{inv} \rangle$ be a group and let $x, y \in \mathbf{G}$. If x and y satisfy the equation

$$x \circ y = \text{id},$$

then $y = \text{inv}(x)$ and $x = \text{inv}(y)$.