

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