7. Let $G$ be a group with identity element $e$. Suppose that $x^2 = e$ for all $x \in G$. Prove that $G$ is an abelian group.

Take $x$ and $y \in G$.

$$(xy)^2 = e \quad \text{by hypothesis}$$

thus $xyxy = e$

multiplying on the left by $x$ and on the right by $y$

$xxyxyy = xy$

$. \therefore \ yx = xy \checkmark$