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 $y \in G$,

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

thus $xy\,xy = e$

multiply on the left by x and on the right by y

$$x\,x\,y\,x\,y\,y = xy$$

$$\therefore \quad yx = xy \checkmark$$