Chapter II Groups, first encounter
§3 The category Grp

Problem 3.2:

Let $\varphi : G \rightarrow H$, $\psi : H \rightarrow K$ be morphisms in category with products, and consider morphisms between the products $G \times G$, $H \times H$, $K \times K$ as in Exercise 3.1.
Prove that

$$(\psi\varphi) \times (\psi\varphi) = (\psi \times \psi)(\phi \times \phi)$$

Solution: