Revision Problem

Name: **My Name Goes Here**

Let G be a group with identity $e \in G$.

(a) Give a concrete example of a group G and elements $a, b \in G$ where $(ab)^{-1} \neq a^{-1}b^{-1}$.

HERE IS MY EXAMPLE

(b) Prove G is an abelian group if and only if for all $a, b \in G$, $(ab)^{-1} = a^{-1}b^{-1}$.

Suppose G is abelian. PROOF

Conversely, suppose for all $a, b \in G$ we have $(ab)^{-1} = a^{-1}b^{-1}$. OTHER HALF OF PROOF