KFUPM/ Department of Mathematics & Statistics/ 172/ MATH 232/ Quiz 4

Name: **ID #:** **Serial #:**

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1. [8pts] Let G be a group with identity e. Prove that if a, b are in G and $ab = e$, then $ba = e$.

2. [12pts] (i) Let $K = \{[0], [2], [4]\}$, a subset of the *additive* group $\mathbb{Z}_7$. Is K a subgroup of $\mathbb{Z}_7$? Justify.

(ii) Let $H = \{[1], [3], [5]\}$, a subset of the *multiplicative* group $\mathbb{Z}_7^*$. Is H a subgroup of $\mathbb{Z}_7^*$? Justify.