PRINT Your Name:________________________________

Quiz for February 11, 2010

The quiz is worth 5 points. **Remove EVERYTHING from your desk except this quiz and a pen or pencil.**

True or False. If true, prove it. If false, give a counter example. Let G be a group and let H be the subset $H = \{g \in G \mid g^2 = \mathrm{id}\}$. Then H is a subgroup of G.

ANSWER: FALSE. Let $G = D_3$. We have $H = \{id, \sigma, \sigma\rho, \sigma\rho^2\}$. The set H is not a group because this set is not closed since σ and $\sigma\rho$ are in H but the product $\sigma(\sigma\rho) = \rho$ is not in H.