Math 305, Quiz 1
September 13, 2007

Name:_____

(1) (5 pts) For each $n \in \mathbb{Z}$, define a map $f_n \colon \mathbb{Z} \to \mathbb{Z}$ by $f_n(x) = nx$. For which values of n is f_n injective or surjective?

(2) (5 pts) Suppose that $\beta \colon S \to T$, $\gamma \colon S \to T$ and $\alpha \colon T \to U$ are all maps. Prove that, if α is one-to-one and $\alpha \circ \beta = \alpha \circ \gamma$, then $\beta = \gamma$ (Note: Two maps are equal if they give the same value when evaluated on any element of the domain.).