

Name: _____

Pid: _____

1. (10 points) Describe a Turing machine that takes a string of 0's and 1's and return the string written in the opposite order.

2. (10 points) Let $U : \mathbb{N}^2 \rightarrow \mathbb{N}$ be a universal Gödel function, and let $K : \mathbb{N} \rightarrow \mathbb{N}$ such that
- $U(K(x), 0) = x$ and
 - $U(n, 0) \neq x$ for all $m < K(x)$.

Show that K is not computable.