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 \( U : \mathbb{N}^2 \to \mathbb{N} \) be a universal Gödel function, and let \( K : \mathbb{N} \to \mathbb{N} \) such that

- \( U(K(x), 0) = x \) and
- \( U(n, 0) \neq x \) for all \( m < K(x) \).

Show that \( K \) is not computable.