Name: ______________________________ Student ID:

Math 166 - Theory of Computability - Fall 1999

Quiz #5 — November 4

Let L_1 and L_2 be the languages defined by:

$$\begin{aligned} L_1 &= \{10^n 10^n : n \in \mathbb{N}\} \\ L_2 &= \{10^m 10^n : m, n \in \mathbb{N}\} \end{aligned}$$

One of these languages is regular and the other is not.

1. Which language is regular? Give a regular expression for the language.

2. Which language is not regular? Give a proof that it is not regular.