Problem 1
Prove that the following language is undecidable:

\[ L = \{ \langle M, w \rangle \mid M \text{ is a TM that rejects input } w \} \]

Problem 2
Prove that the following language is unrecognizable:

\[ L = \{ \langle M \rangle \mid M \text{ is a TM that accepts any input of the form } 0^n1^n \text{ for } n > 0 \} \]