Problem 1. Use the pumping lemma to show that the following language is not regular:

\[ L = \{ www : w \in \{a, b\}^* \} \]

Problem 2. Use the pumping Lemma to show that the following language is not regular:

\[ L = \{ 0^n1^n : n \geq 1 \} \]

Problem 3. Is the following language regular? Prove your answer.

\[ L = \{ a^n b^l : n \geq 3l \} \]