CMPE 350 - Spring 2018

PS 3 - 26.02.18

1.29 Use the pumping lemma to show that the following languages are not regular.

b) $A_2 = \{www | w \in \{a, b\}^*\}$

c) $A_3 = \{a^{2^n} | n \geq 0\}$

1.46 Prove that the following languages are not regular. You may use the pumping lemma and the closure properties of the class of regular languages under union, intersection and complement.

a) $L = \{0^n 1^m 0^n | m, n \geq 0\}$

c) $L = \{w | w \in \{0, 1\}^*$ is not a palindrome$\}$

• Show that $L = \{010^n 1^n | n \geq 0\}$ is not regular.

• Prove: "If a DFA with n states accepts a string of length $n - 1$, then it also accepts infinitely many other strings."