



Arab Academy for Science & Technology and Maritime Transport (AASTMT)

College of Computing and Information Technology (CCIT)

Theory of Computation CS311 – Spring 2014

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Use the pumping lemma to show that the following languages are not context free.

- a.  $\{0^n \# 0^{2n} \# 0^{3n} \mid n \geq 0\}$
- b.  $\{w \# t \mid w \text{ is a substring of } t, \text{ where } w, t \in \{a, b\}^*\}$