

CMPE 350 - Spring 2017

PS 8 - 06.04.17

- For some $n \geq 1$, does there exist an n -state PDA which accepts finitely many strings, and at least one of those strings is of length n ?

2.35 Let G be a CFG in Chomsky normal form that contains b variables. Show that if G generates some string with a derivation at least 2^b steps, $L(G)$ is infinite.

- If L is a context-free language with infinitely many odd-length strings and infinitely many even-length strings then L can be written as the union of two infinite CFL's whose intersection is empty.
- Design a context-free grammar whose language contains a string which has infinitely many derivations.
- Prove that a PDA that has the ability to reverse the contents of its stack is more powerful than the ordinary PDA.