

Chapter 7

上下文无关语言的性质

1. [Exercise 7.2.1] Use the CFL pumping lemma to show each of these languages not to be context-free:

a) $\{a^i b^j c^k \mid i < j < k\}$.

✗



b) $\{a^n b^n c^i \mid i \leq n\}$.

✗



c) $\{0^p \mid p \text{ is a prime}\}$. *Hint: Adapt the same ideas used in Example 4.3, which showed this language not to be regular.*

✗



d) $\{0^i 1^j \mid j = i^2\}$.

✗

e) $\{a^n b^n c^i \mid n \leq i \leq 2n\}$.

✗

f) $\{ww^R w \mid w \text{ is a string of 0's and 1's}\}$. That is, the set of strings consisting of some string w followed by the same string in reverse, and then the string w again, such as 001100001.

✗

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