

October 17, 2012

Wednesday

* Exam 2

October 25, 2012 Thursday

EEEC 103

6⁰⁰_{pm} - 7³⁰_{pm}

Section 2.3 regular sets & expressions

3.1 CFG

3.2 Examples

3.4 verifying grammars (induction proofs
on certain
properties)3.5 leftmost derivation
and ambiguity4.1 elimination of λ -rules4.2 elimination of ~~chain~~ rules
chain

Homework: 5, 6, 7

Please let me know if you have
a conflict. Specify the times you are
available.

$$S \rightarrow SS \mid B a B a B a B \mid B \mid \Lambda$$

$$S \Rightarrow \underline{SS} \Rightarrow \underline{S}SS \Rightarrow SSSS$$

for if $w \in L$ then $ww \in L$
 this adds one more S
 It is not a pattern for repeating strings.

HW 6 4 $S \rightarrow aAb \quad A \rightarrow aA \mid bA \mid \Lambda$

basis: shortest string $S \Rightarrow aAb \Rightarrow ab \quad \checkmark$

IH: if a string is generated using n steps of derivation it has "ab" as a substring.

IS: prove that strings generated using $n+1$ steps of derivation have "ab" as a substring.

$$\begin{array}{lcl}
 S \Rightarrow aAb \Rightarrow ab & \xrightarrow{A \rightarrow \Lambda} & \text{2 steps} \\
 S \Rightarrow aAb \Rightarrow aAb \Rightarrow aab & \xrightarrow{A \rightarrow aA} & \text{3 steps} \\
 S \Rightarrow aAb \Rightarrow aAb \Rightarrow abb & \xrightarrow{A \rightarrow bA} & \text{4 steps}
 \end{array}
 \left. \begin{array}{l} n \\ n+1 \end{array} \right\}$$

Diagram illustrating the derivation of strings from aAb using the rule $A \rightarrow aA$ or $A \rightarrow bA$. The diagram shows the string aAb with A underlined. Arrows point to the resulting strings aab (from $A \rightarrow aA$) and abb (from $A \rightarrow bA$).

HW Q5

$$S \rightarrow aaS \mid aaaS \mid \lambda$$

(3)

$$a \notin L(G)$$

$$S \Rightarrow \lambda$$

$$S \Rightarrow aaS \Rightarrow aaaS \Rightarrow aaaaaaS \Rightarrow \dots$$

$$\begin{array}{cccccccc} & 2 & & 3 & & 4 & & 5 & & 6 & & 7 & & 8 & & \dots \\ S \Rightarrow & aa & S & \Rightarrow & aaaS & \Rightarrow & aaaaaaS & \Rightarrow & \dots \end{array}$$

$$\begin{array}{cccc} S \Rightarrow & aaaS & \Rightarrow & aaaaaaS & \Rightarrow & \dots \\ & 3 & & 6 & & 9 & & \dots \end{array}$$

$$S \rightarrow \lambda \mid aaS \mid$$

$$S \rightarrow AA \mid A$$

$$S \rightarrow aaA \mid \lambda$$

$$A \rightarrow aA \mid \lambda$$