

## Exercises for FLL, Fall 2015, sheet 6

*Return Thursday Oct 22, in class*

**Exercise 1.** (requires a little work!) Convert the following grammar  $G = (V, T, P, S)$  into CNF, by (i) eliminating  $\varepsilon$ -productions, (ii) eliminating unit productions, (iii) eliminating useless symbols, (iv) putting the resulting grammar in CNF.

$$S \rightarrow 0A0 \mid 1B1 \mid AB$$

$$A \rightarrow C$$

$$B \rightarrow S \mid A$$

$$C \rightarrow S \mid \varepsilon$$

**Exercise 2** Is *baaab* in the language of the grammar

$S \rightarrow AB \mid BC, A \rightarrow BA \mid a, B \rightarrow CC \mid b, C \rightarrow AB \mid a$ ? Provide the CYK table and the answer.