

Assignment 13

Automata & Theory of Computation

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1. Remove all unit-productions and all λ -productions from the grammar with productions

$$S \rightarrow bC \mid a,$$

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

$$B \rightarrow bB \mid \lambda,$$

$$C \rightarrow AB.$$

Remove λ -production

$$S \rightarrow a \mid b \mid bC$$

$$A \rightarrow aA \mid a$$

$$B \rightarrow bB \mid b$$

$$C \rightarrow AB \mid A \mid B$$

\Rightarrow

Remove unit-production

$$S \rightarrow a \mid b \mid bC$$

$$A \rightarrow aA \mid a$$

$$B \rightarrow bB \mid b$$

$$C \rightarrow AB \mid aA \mid a \mid bB \mid b$$