

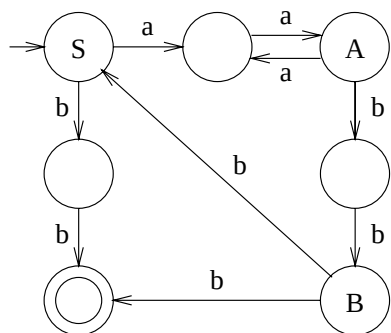
Automata Theory: Solutions 5

[illegible]

Problem 1

Draw an NFA for the language defined by the following grammar:

$$\begin{aligned} S &\rightarrow aaA \mid bb \\ A &\rightarrow aaA \mid bbB \\ B &\rightarrow bS \mid bC \\ C &\rightarrow S \mid \lambda \end{aligned}$$



Problem 2

Give a right-linear and left-linear grammar for the following language:

$$\{(ab)^n(bb)^ma : n \geq 1, m \geq 2\}$$

Right-linear grammar:

$$\begin{aligned} S &\rightarrow abS \mid abA \\ A &\rightarrow bbA \mid bbbba \end{aligned}$$

Left-linear grammar:

$$\begin{aligned} S &\rightarrow Aa \\ A &\rightarrow Abb \mid Bbbbb \\ B &\rightarrow Bab \mid ab \end{aligned}$$