

# Homework 7

Joe Puccio

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3.1.2

$$S \Rightarrow bAb \Rightarrow bSSb \Rightarrow baAaSb \Rightarrow baAabAbb \Rightarrow baabAbb \Rightarrow baabbb.$$

3.1.5

a)  $S \Rightarrow aB \Rightarrow abS \Rightarrow abaB \Rightarrow ababS \Rightarrow ababbA \Rightarrow ababba$

3.

there at least 1 or fewer a's than b's. at least 1 more b than a. Let  $G = (V, \Sigma, R, S)$ , where  $V = \{a, b, S, A, B\}$ ,  $\Sigma = \{a, b\}$ , and  $R = \{S \Rightarrow A, A \Rightarrow aAb, A \Rightarrow B, B \Rightarrow bB, B \Rightarrow b\}$