Module #1 Homework

Sec 1.2 # 15, 17c

15. Give a simple description of the language generated by the grammer with productions

$S \to aaA$

$A \to bS$

$S \to \lambda$

* $S \Rightarrow aaA \Rightarrow aabS$

$\Rightarrow aab\lambda \Rightarrow aab$

* aab is the pattern thus $(aa)^n b^n$ is the description.

$L(G) = \{(aa)^n b^n : n \geq 0\}$

17. Let $\Sigma = \{a, b\}$. For each of the following languages, find a grammer that generates it.

(c) $L_3 = \{a^{n+3} b^n : n \geq 2\}$

$S \to aaaA$

$A \to aAb$

$A \to \lambda$

$G = (\{S, A\}, \{a, b\}, S, P)$