Make up Homework Module 1 | Sec 1.2; 16, 17b

16. What language does the grammer with these productions generate?

$S \to Aa$

$A \to B$

$B \to Aa$

$S \Rightarrow Aa \Rightarrow Ba \Rightarrow Aaa \Rightarrow Baa$
$\Rightarrow Aaaa \Rightarrow Baaa \Rightarrow Aaaaa \ldots$

* This language is NOT regular, it has no final state; ie: infinite

$L = \{$ Infinite string of a's $\}$

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

b) $L_b = \{ a^{3n} b^{2n} : n \geq 2 \}$

* Productions (P)

$S \to aaaaaa A bbbb B$

$A \to aaaA \mid \lambda$

$B \to bbB \mid \lambda$

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

* n=3

$S \Rightarrow aaaaaaAbbbbB \Rightarrow aaaaaaaaaAbbbbB$
$\Rightarrow aaaaaaaaaabbbbB \Rightarrow aaaaaaaaaabbbbbbB$
$\Rightarrow aaaaaaaaaabbbbbb$