

HW6

1. a. $L(G)$ contains all strings that begin with n a's and ends with n b's, where n can be zero or more and has either a or b followed by any number of a's and b's and possibly an a in the middle.

b. $L(G) = a^b(a \cup b)b^n \cup a^n(a \cup b)ab^n$

2. a. $S \rightarrow aS \mid AS \mid \varepsilon$

$A \rightarrow aAAb \mid \varepsilon$

b. $S \rightarrow aBS \mid bAS \mid \varepsilon$

$a \rightarrow a \mid bAA$

$B \rightarrow b \mid aBB$

c. $S \rightarrow aBS \mid bAS \mid aS \mid \varepsilon$

$A \rightarrow a \mid bAA$

$B \rightarrow b \mid aBB$