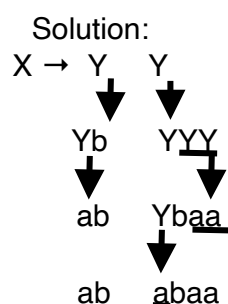


Q1. Consider the context-free grammar $G = \langle \{X, Y\}, \{a, b\}, P, X \rangle$, with productions P :

$$X \rightarrow YY$$

$$Y \rightarrow bY \mid Yb \mid a \mid YYY$$

- a. Show using derivation how the string *ababaa* can be generated by this grammar.



- b. Construct a parse tree for this string.

