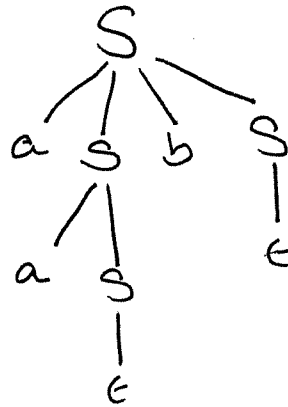
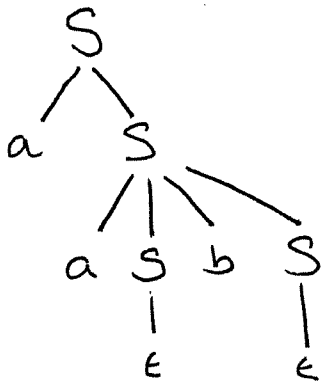


$$S \rightarrow aS \mid aSbS \mid \epsilon$$

A. two parse trees for aab:



b. two leftmost derivations:

$$S \rightarrow aS \rightarrow aaSbS \rightarrow aa\epsilon bS \rightarrow aabe$$

ie aabS      ie aab

$$S \rightarrow aSbS \rightarrow aaSbS \rightarrow aa\epsilon bS \rightarrow aabe$$

ie aabS      ie aab

c. two rightmost derivations:

$$S \rightarrow aS \rightarrow aaSbS \rightarrow aaSb\epsilon \rightarrow aa\epsilon b$$

ie aaSb      ie aab

$$S \rightarrow aSbS \rightarrow aSb\epsilon \rightarrow aaSb \rightarrow aa\epsilon b$$

ie aSb      ie aab

Leftmost derivations rewrite the leftmost nonterminal first  
 Rightmost derivations rewrite the rightmost nonterminal first