

$$S \rightarrow aSf | w | E$$

$$w \rightarrow bWe | y | E$$

$$y \rightarrow cyd | E$$

(2) add 1000 c 40

W > a St / tot

S -> a Sf | Wd Ze

w -> bWc/bc

z -> dZe | de

(3)

 $S \rightarrow OW1 | 1W0 | WW | E$ $S \rightarrow OW | WS | OS$



 $W \rightarrow aaWb \mid aab$ $S \rightarrow aW \mid aS$



 $W \rightarrow aWa \mid aba$ $S \rightarrow aSa \mid abWa$



This will have the same leftmost and rightmost passe trose.



S > a Sc.

> aa Scc

> aaa Sccc

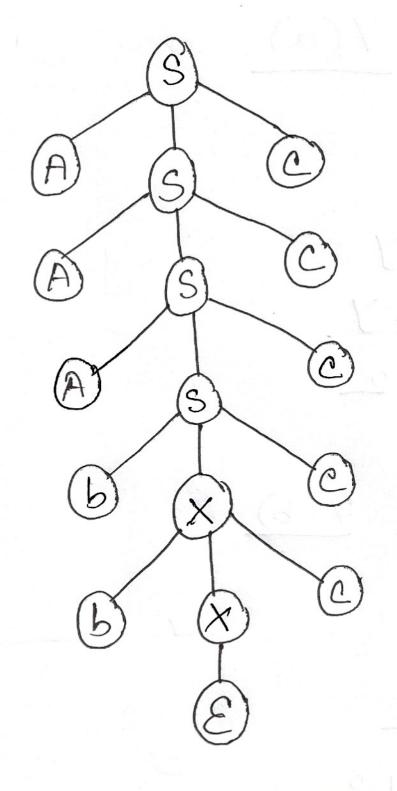
> aaa X ccc

> aaa X ccc

> aaab X cccc

> aaabb X cccc

aaabbeccec



This is the tree for BOTH leftmost and rightmost passing.

P.T.0

$$\rightarrow$$
 $0 \times 1 Y$

$$S \rightarrow \times J$$

$$\rightarrow$$
 0×12

$$\rightarrow$$
 00×112

$$\rightarrow$$
 01 Y

$$\rightarrow$$
 012

$$\rightarrow$$
 012

So, we are getting 2 left most derivation fors the same strong. Hence, ambiguous grammar