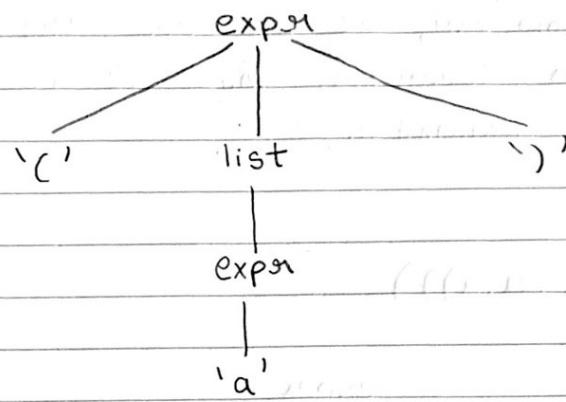


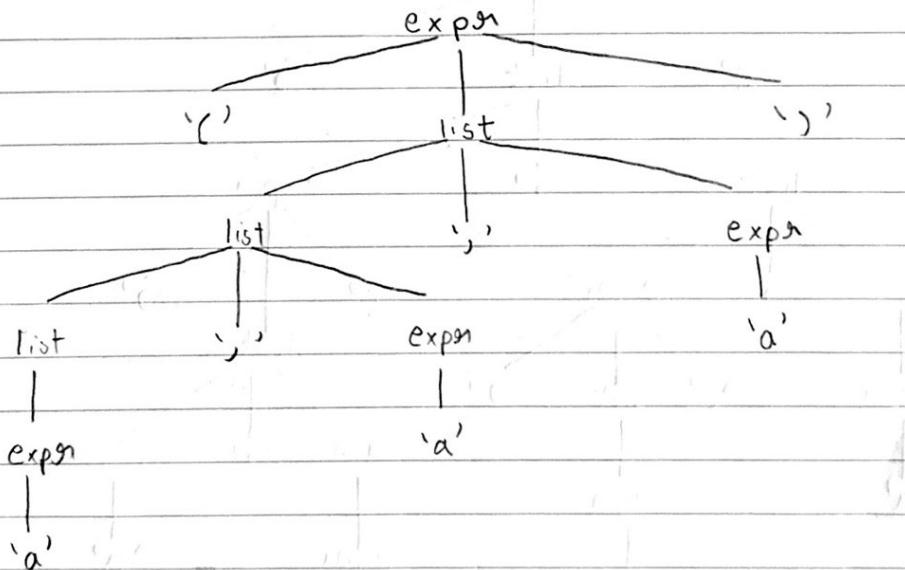
Homework 2

Problem 1

a) (a)



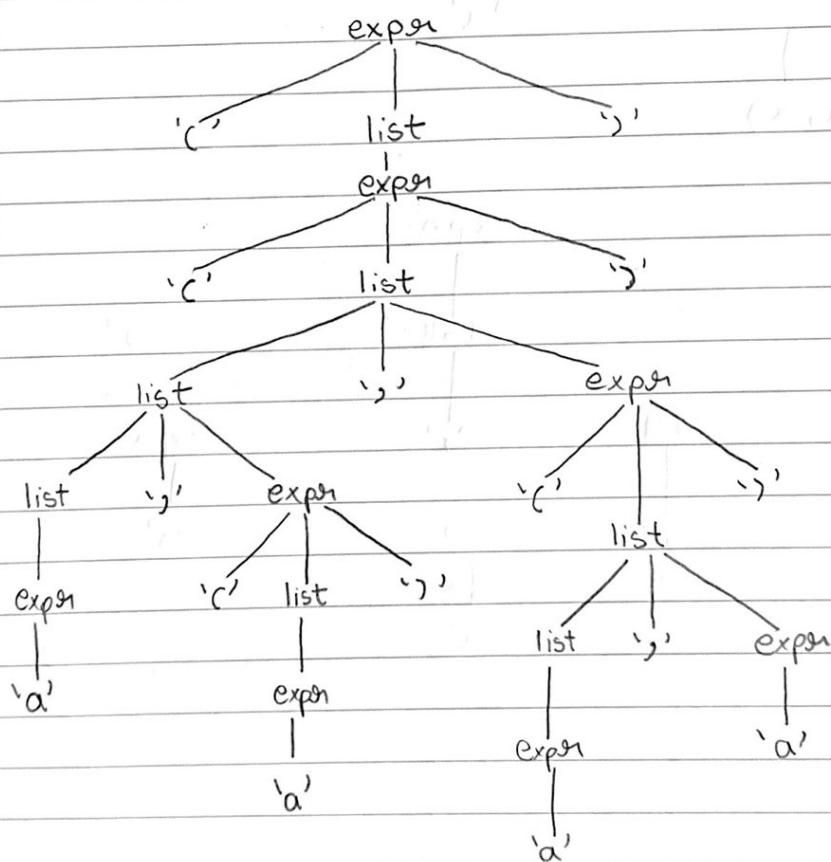
b) (a,a,a)



c) $a, (a), ((a))$

This is not in the language generated by the grammar. The parse tree should start with expr and the only branches of expr are either ' $($ ' list $)'$ or ' a '. Since there are no starting brackets, the first one doesn't work. However, if we use the second one, ' a ' we reach terminal. Thus, it is not a possibility of this grammar.

d) $((a, (a), (a,a)))$



Problem 2

a) $(aa)^*$

b)

$\text{expr} \rightarrow \epsilon \mid \text{list}$

$\text{list} \rightarrow 'aa' \mid 'aa' \text{ expr}$

c)

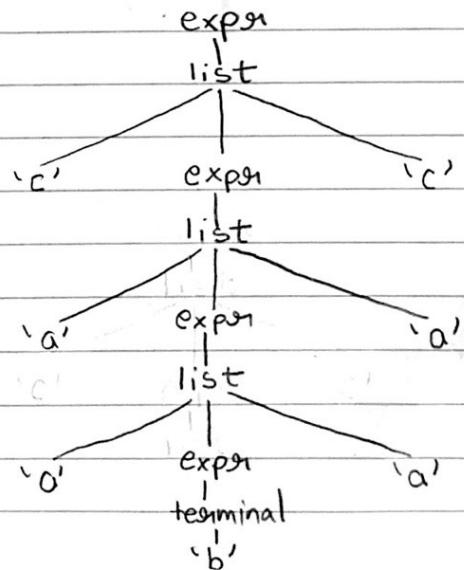
$\text{expr} \rightarrow \text{list} \mid \text{terminal}$

$\text{list} \rightarrow 'a' \text{ expr} 'a' \mid 'b' \text{ expr} 'b' \mid 'c' \text{ expr} 'c'$

$\text{terminal} \rightarrow 'a' \mid 'aa' \mid 'b' \mid 'bb' \mid 'c' \mid 'cc'$

d)

- caabaac ~~passed~~



- abccba ✅ passed

