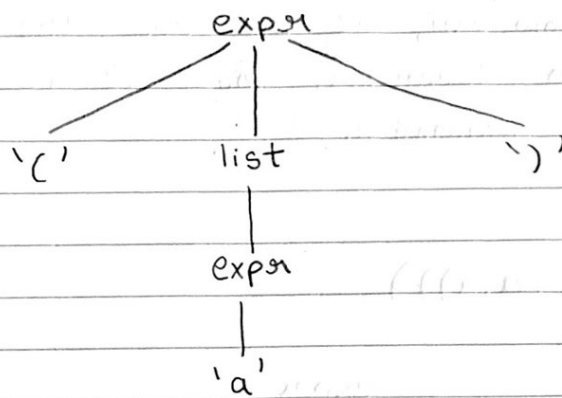


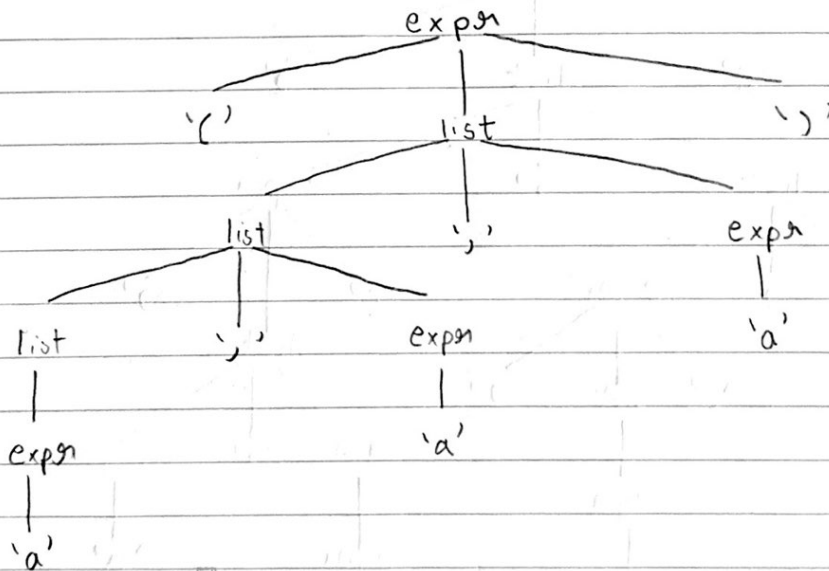
Homework 2

Problem 1

a) (a)

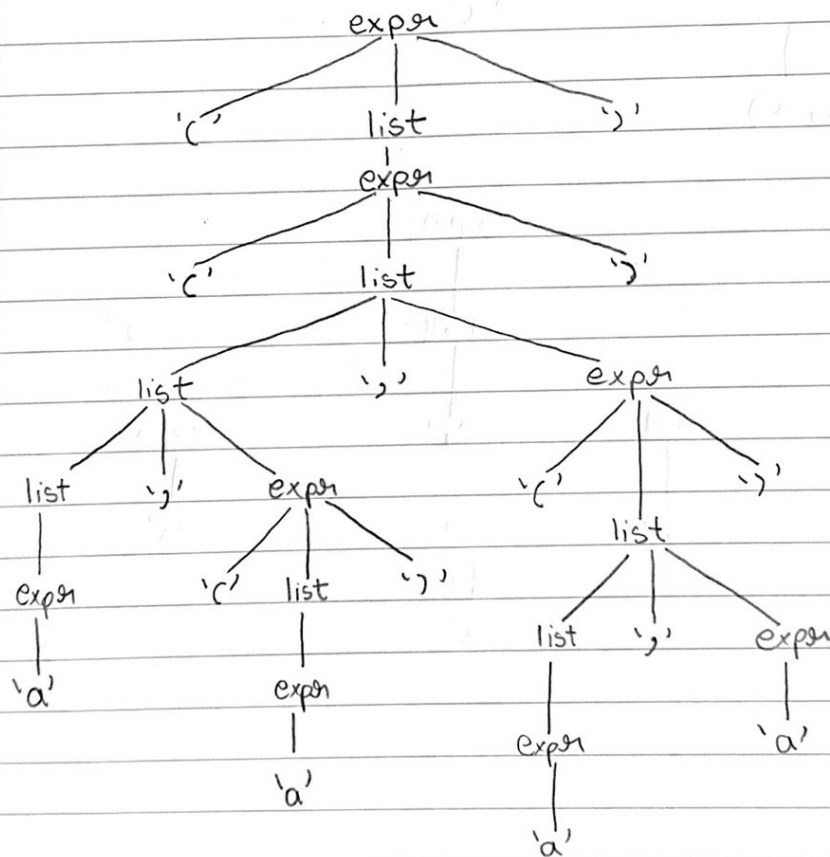


b) (a, a, a)



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 'c' list 's' 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) $(caa)^*$

b)

$expr \rightarrow \epsilon \mid list$

$list \rightarrow 'aa' \mid 'aa' expr$

c)

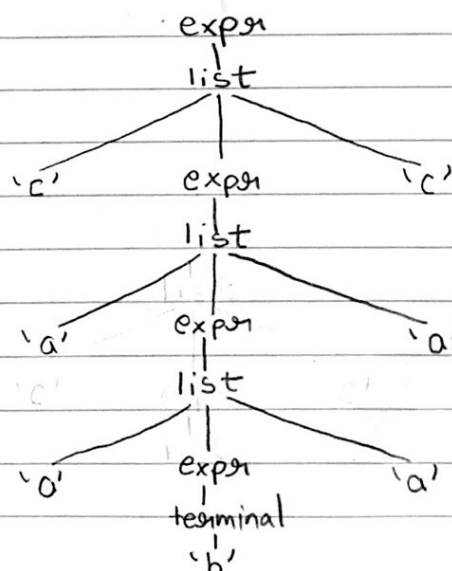
$expr \rightarrow list \mid terminal$

$list \rightarrow 'a' expr 'a' \mid 'b' expr 'b' \mid 'c' expr 'c'$

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

d)

• caabaac ✓ passed



• abccba ✓ passed

