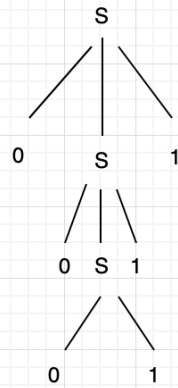
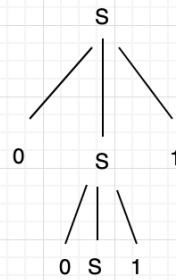


4.5.1

a)



b)



4.5.2

a)

$S \rightarrow SS+ \mid SS^* \mid a$

SSS+a*+

|SSS+a*+ —shift

S|SS+a*+ —reduce

SS+|SS+a*+ —shift

SS+S|S+a*+ —shift

SS+SS+|a*+ —reduce

SS|a*+ —shift

SSa|*+ —reduce

SSS|*+ —shift

SSS*|+ —reduce

SS|+ —shift

SS+ —reduce

B)

$S \rightarrow SS+ \mid SS^* \mid a$
 $SS+a^*a+$

| $SS+a^*a+$ —shift
S| $SS+a^*a+$ —shift
 $SS|+a^*a+$ —shift
 $SS+|a^*a+$ —reduce
S| a^*a+ —shift
Sa| a^*a+ —reduce
 $SS|^*a+$ —shift
 $SS^*|a+$ —reduce
S| $a+$ —shift
Sa| $a+$ —reduce
 $SS|+$ —shift
 $SS+$

C)

$S \rightarrow SS+ \mid SS^* \mid a$
 aaa^*a++

| aaa^*a++ —shift
a| aa^*a++ —shift
 $aa|^*a++$ —shift
 $aaa^*|a++$ —shift
aS| $a++$ —shift
aSa| $a++$ —shift
aSa+| $+$ —reduce
aS| $+$ shift
aS+ —reduce
S —reduce
a