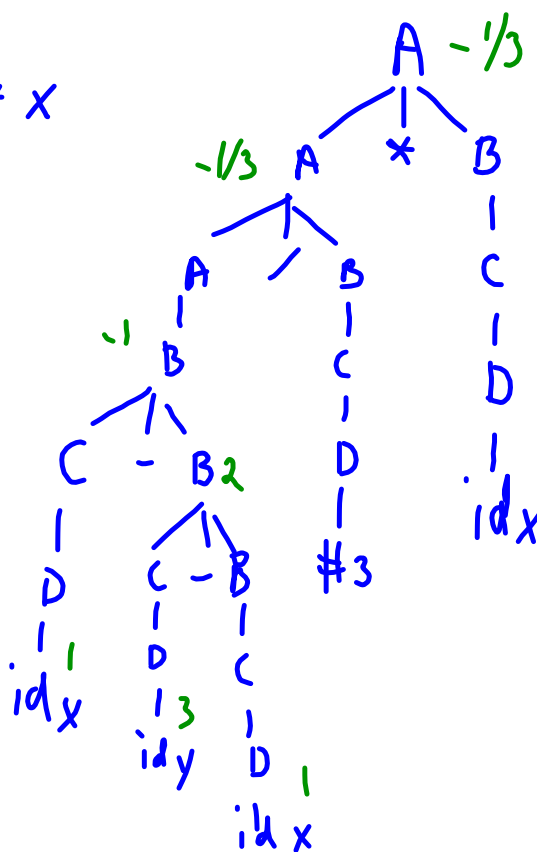


1) A \Rightarrow begin Vars Stats end
 • \Rightarrow begin id Vars Stats end
 \Rightarrow begin id id Vars Stats end
 \Rightarrow begin id id Stats end
 \Rightarrow begin id id Stat Stats end
 \Rightarrow begin id id id = #; Stats end
 \Rightarrow Stat end
 \Rightarrow id = #; end

2) $A \rightarrow A * B \mid A / B \mid B$
 $B \rightarrow C - B \mid C + B \mid C$
 $C \rightarrow -C \mid \> C \mid D$
 $D \rightarrow (A) \mid id \mid \#$

3) $x - y - x / 3 * x$



4) $\langle P \rangle \Rightarrow \langle gs \rangle \langle sts \rangle$
 $\langle gs \rangle \rightarrow id \langle gs \rangle \mid \epsilon$
 $\langle sts \rangle \rightarrow \langle st \rangle \langle sts \rangle \mid \epsilon$
 $\langle st \rangle \rightarrow \langle assign \rangle \mid \langle loop \rangle \mid \langle in \rangle \mid \langle out \rangle$
 $\langle assign \rangle \rightarrow id = \#$
 $\langle loop \rangle \rightarrow \text{for } (id \langle \# \rangle) \langle st \rangle$
 $\langle in \rangle \rightarrow \text{read } id$
 $\langle out \rangle \rightarrow \text{print } id$