Just The Setup

Define $P(n)$ "for all strings, x, of length n, len(x^R)=len(x)."

Write a strong inductive proof (not a structural one yet).
What's the first sentence of your inductive step?

More Examples

$(0^*1^*)^*$

0^*1^*

$(0 \cup 1)^*(00 \cup 11)^*(0 \cup 1)^*$

$(00 \cup 11)^*$

Context Free Grammars

We think of context free grammars as **generating** strings.

1. Start from the start symbol S.
2. Choose a nonterminal in the string, and a production rule $A \rightarrow w_1|w_2| \dots |w_k$ replace that copy of the nonterminal with w_i.
3. If no nonterminals remain, you're done! Otherwise, goto step 2.

A string is in the language of the CFG iff it can be generated starting from S.

Examples

$S \rightarrow 0S0|1S1|0|1|\varepsilon$

$S \rightarrow 0S|S1|\varepsilon$

$S \rightarrow (S)|SS|\varepsilon$