CSU390 Theory of Computation	Constructing CFGs
Fall 2004	October 12, 2004

Constructing Context-free Grammars

Consider the problem of constructing a context-free grammar for the language described in Sipser Exercise 2.6 (c):

$$\left\{ w\#x\mid w^{R}\text{ is a substring of }x\text{ for }w,x\in\{0,1\}^{*}\right\}$$

Solution: All strings in this language are of the form $w#\Sigma^*w^R\Sigma^*$. We can construct a context-free grammar for this language as follows.