1 5.3: Recursion (continued)

Palindromes (cont.)

Base case: $\lambda \in P$ if $x \in \Sigma$ then $x \in P$.

Recursive: if $x \in \Sigma$ and $w \in P$.

then $xwx \in P$

(note: this doesn't cover everything: $xxwxx \in P$)

Length of a string

Basis step:

$\text{length}(\lambda) = 0$

Recursive step:

if $w \in \Sigma^*$ and $x \in \Sigma$, then $\text{length}(wx) = \text{length}(w) + 1$

Σ^{even}: *even-length strings over* Σ.

Basis step:

$\lambda \in \Sigma^{even}$

Recursive step:

if $w \in \Sigma^{even}$ and $x \in \Sigma$, $y \in \Sigma$, then $wxy \in \Sigma^{even}$