$$
\begin{aligned}
p &::= p/p \mid test[q] \\
q &::= q \wedge q \mid \text{true} \mid p
\end{aligned}
$$

where

- p is the root nonterminal of the grammar and
- $test$ is one of $\{*\} \cup \Sigma$.

Figure 1: Syntax of Simple CoreXPath.

$p \mapsto * \ \langle p \rangle \ \bar{*}$, where

$$
\begin{aligned}
\langle test[q] \rangle &:= \textbf{mark}(test)\ \textbf{unmark}(\langle q \rangle)\ \bar{test} \\
\langle test[q]/p \rangle &:= test\ \textbf{unmark}(\langle q \rangle)\ \langle p \rangle\ \bar{test} \\
\langle q_1 \wedge q_2 \rangle &:= \langle q_1 \rangle\ \langle q_2 \rangle \\
\langle \text{true} \rangle &:=
\end{aligned}
$$

Figure 2: Translation to Tree Patterns.

Definition
A CoreXPath path p_1 is said to semantically contain another one p_2, written $p_1 \supseteq p_2$, if for every tree document and node n therein, $[\![p_1]\!]_{NodeSet}(n) \supseteq [\![p_2]\!]_{NodeSet}(n)$.

Theorem
Let p_1 and p_2 be Simple CoreXPath queries. Let t be the tree pattern corresponding to p_2, with root n_0 and tip n_{tip}. Then $p_1 \supseteq p_2$ iff $n_{tip} \in [\![p_1]\!]_{NodeSet}(n_0)$ (interpreted on t; note the role of $*$ as an actual symbol in t).