Handout 2

Having specified what problem our matching algorithm, $match$, is supposed to solve, namely for a given regular expression r and string s answer $true$ if and only if

$$s \in L(r)$$

Clearly we cannot use the function L directly in order to solve this problem, because in general the set of strings L returns is infinite (recall what $L(a^*)$ is). In such cases there is no algorithm then can test exhaustively, whether a string is member of this set.

The algorithm we define below consists of two parts. One is the function $nullable$ which takes a regular expression as argument and decides whether it can match the empty string. This can be easily defined recursively as follows: