

CS 334 – Fall 2004: Answers for Assignment 4

3.2.6 (a) LL^*

- (b) suffixes of strings in L
- (c) prefixes of strings in L
- (d) suffixes and prefixes

3.4.2 (a) not the same: Let $R = \{a\}$ and $S = \{b\}$. $(R + S)^*$ has all strings of a's and b's mixed, but $R^* + S^*$ has only strings of a's alone and b's alone. For example, ab is in $(R+S)^*$ but not in $R^* + S^*$

3.4.2 (c) not the same: Let $R = \{a\}$ and $S = \{b\}$. $(RR^*S)^*$ is composed of zero or more occurrences of strings of the form $a \dots ab$, one or more a's ended by one b. But all of the strings in $(RS + R)^*RS$ must end in ab . For example, the empty string is in $(RR^*S)^*$, but not in $(RS + R)^*RS$.

3.4.3 $(0 + 1)^* (1(0 + 1) + 1(0 + 1)(0 + 1))$

$(0 + 1)^*1(0 + 1)(\Lambda + (0 + 1))$