

CS 334 – Fall 2004:

Hint for 3.2.8

Let $(R_{ij}^k)_m$ represent the number of paths from state i to state j of length m that go through no state numbered higher than k . Show that it is possible to compute these numbers for all states i and j and for m no greater than n by using induction on k .

Show this induction.

Then the answer you need is the sum of $(R_{ij}^k)_n$ where k is the number of states, i is the start state, and j is any accepting state.

3.2.1 One regular expression is $(1 + 01 + 00(0 + 10)^*11)^*00(0 + 10)^*$