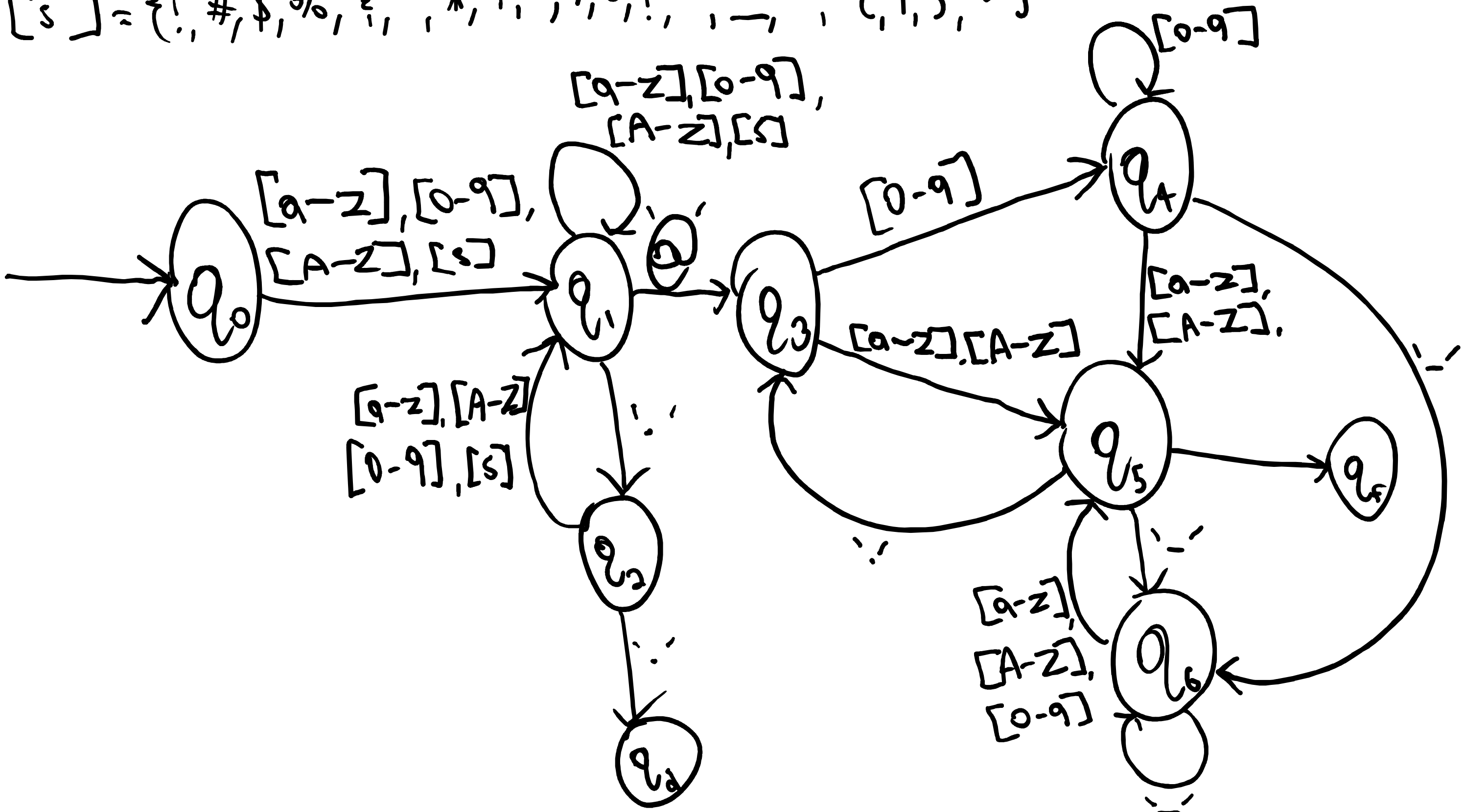
Homework 1

1.

Σ = ([a-z], [A-Z], [0-9], [s], '.', @)

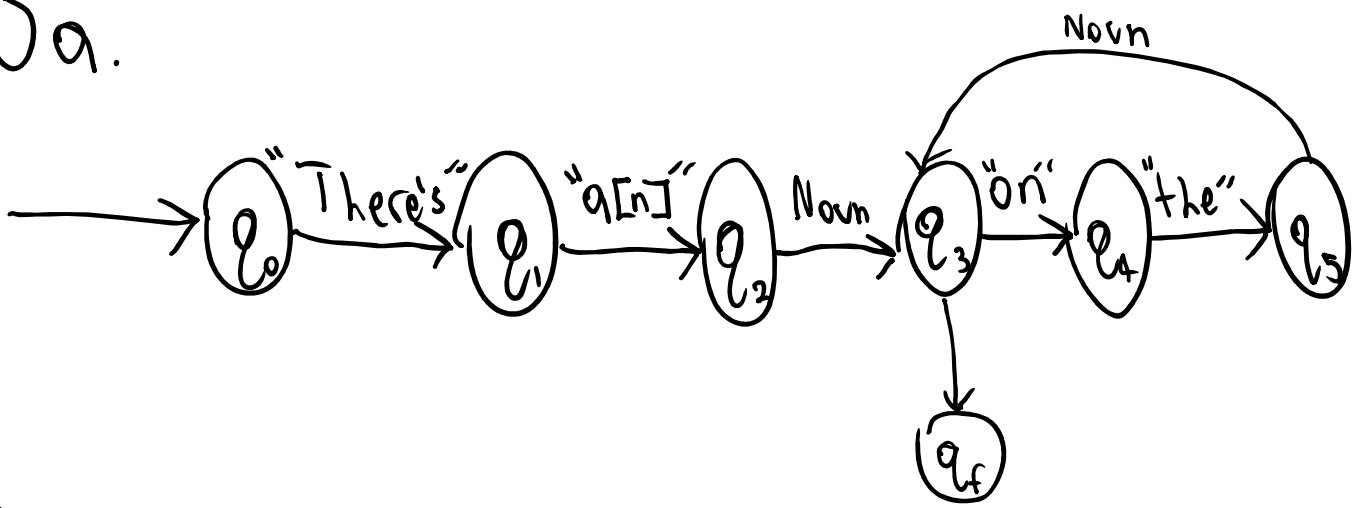
[s] = {!, #, $, %, &, ', *, +, -, /, =, ?, ^, _, `, {, |, }, ~} — Does not include '.'



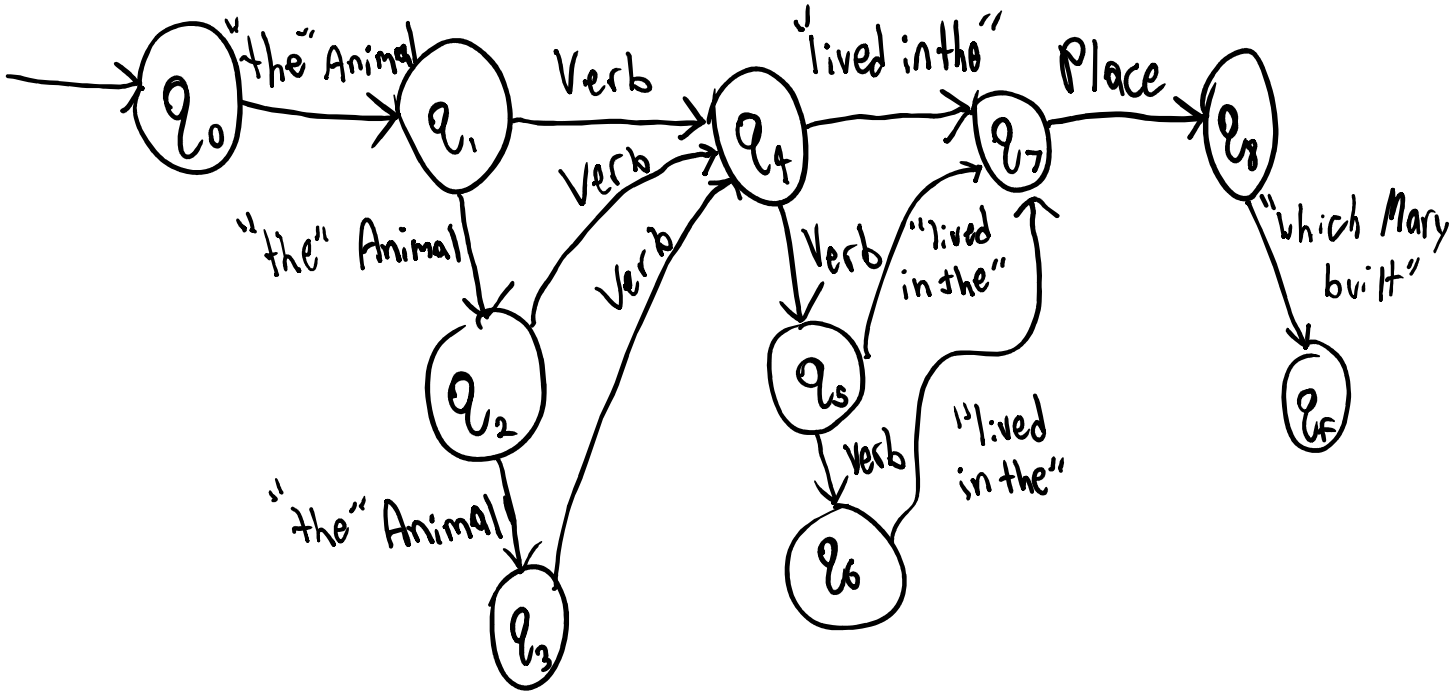
2. / ([A-Z][a-z][0-9][s])(([A-Z][a-z][0-9][s])+)([A-Z][a-z][0-9][s])(@) /

[s] does not include '.' In this case as well. Period is on the side.

3a.



3b.



3c. It would be possible to design an FSA that would work to arbitrary depth n if there was not a limit set. The difference between part A and part B is that part A does not have a limit on the number of nouns used, but in part B, the limit only allows it to go to a predetermined number. This means that an infinite loop can be done in part A, but in part B, a way to count the amount of times done is needed to ensure the limit is not surpassed.