COS 210

Worksheet 9

Scott Bebington

U21546216

**Question 1**

Q = {q}

Σ = {a,b,c}

Γ = {S,A,B,C}

And R being:

q0S 🡪 qNAB

q S 🡪 qNε

q0A 🡪 qNAB

q0A 🡪 qNCB

q0A 🡪 qRε

q0B 🡪 qNAB

q0B 🡪 qRε

q0C 🡪 qNAC

q0C 🡪 qRε

**Question 2**

q00$ → q0R$S, push S onto the stack

q00S → q0RSS, push S onto the stack

q01$ → q0N$, first symbol is a 1, loop forever

q01S → q0Rε, first 1 is read, pop S and move right

q0 $ → q0Nε, string is empty, accept string

q0 S → q0NS, string only contains 0’s, loop forever

q10$ → q1N$, 0 appears to the right of 1, loop forever

q10S → q1NS, o appears to the right of 1, loop forever

q11$ → q1N$, more than 2x 1’s than 0’s, loop forever

q11S → q1R$, pop S off the stack and move right

q1 $ → q1Nε, accept

q1 S →q1NS, too many 0’s, loop forever