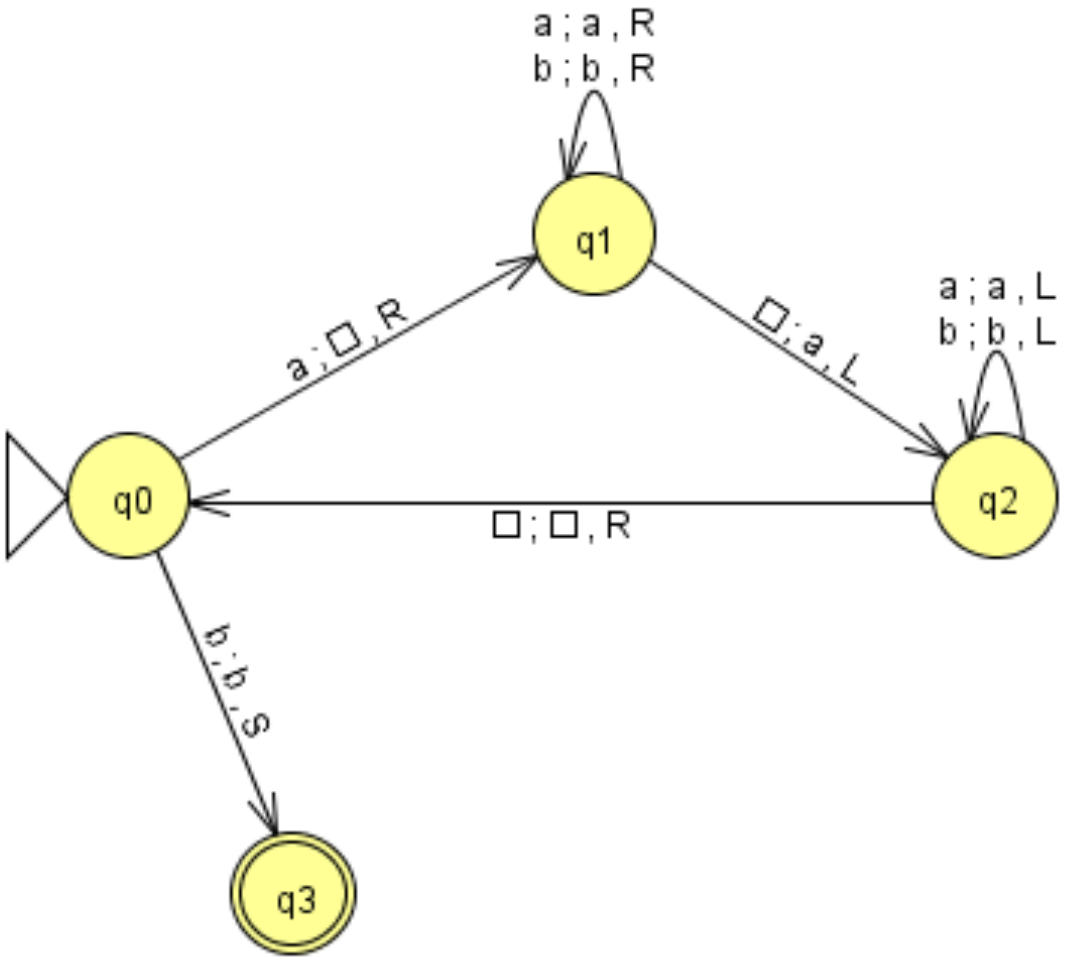
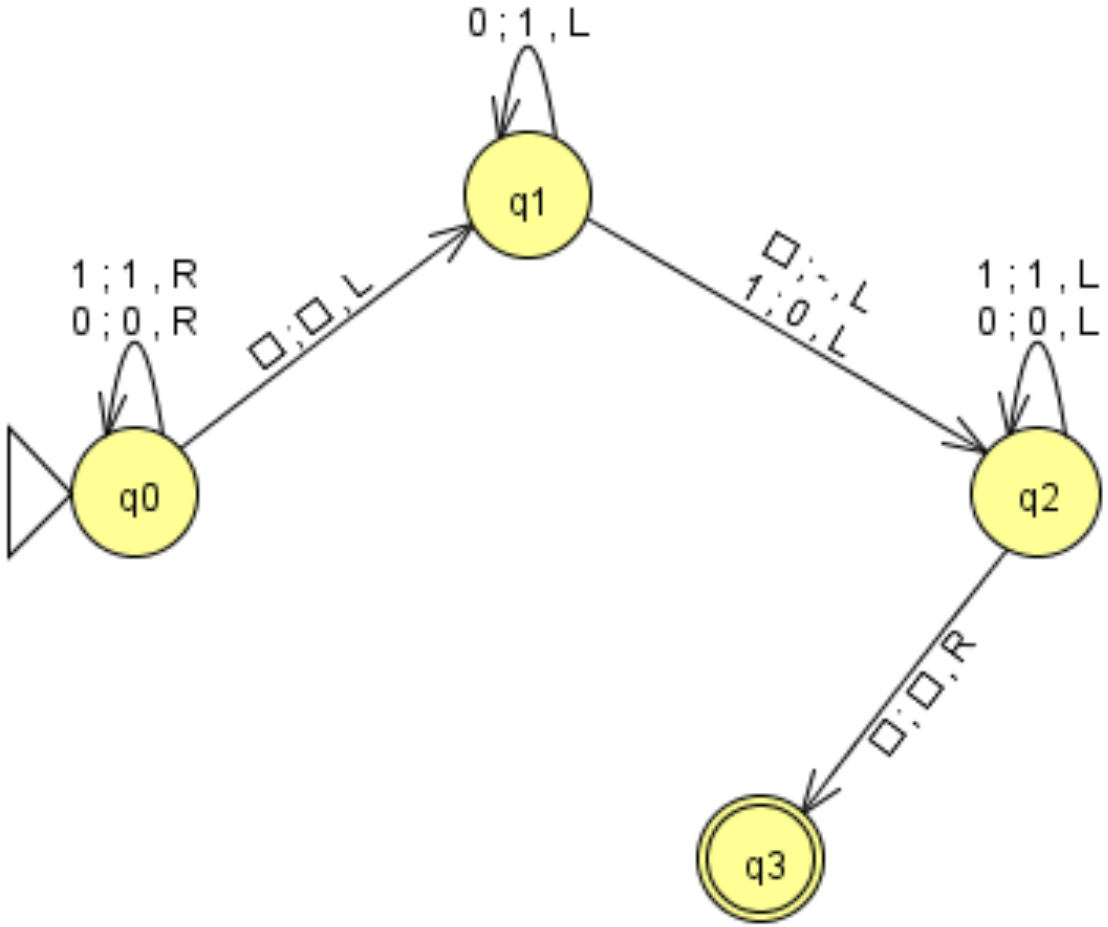
Turing Machines
Some exercises

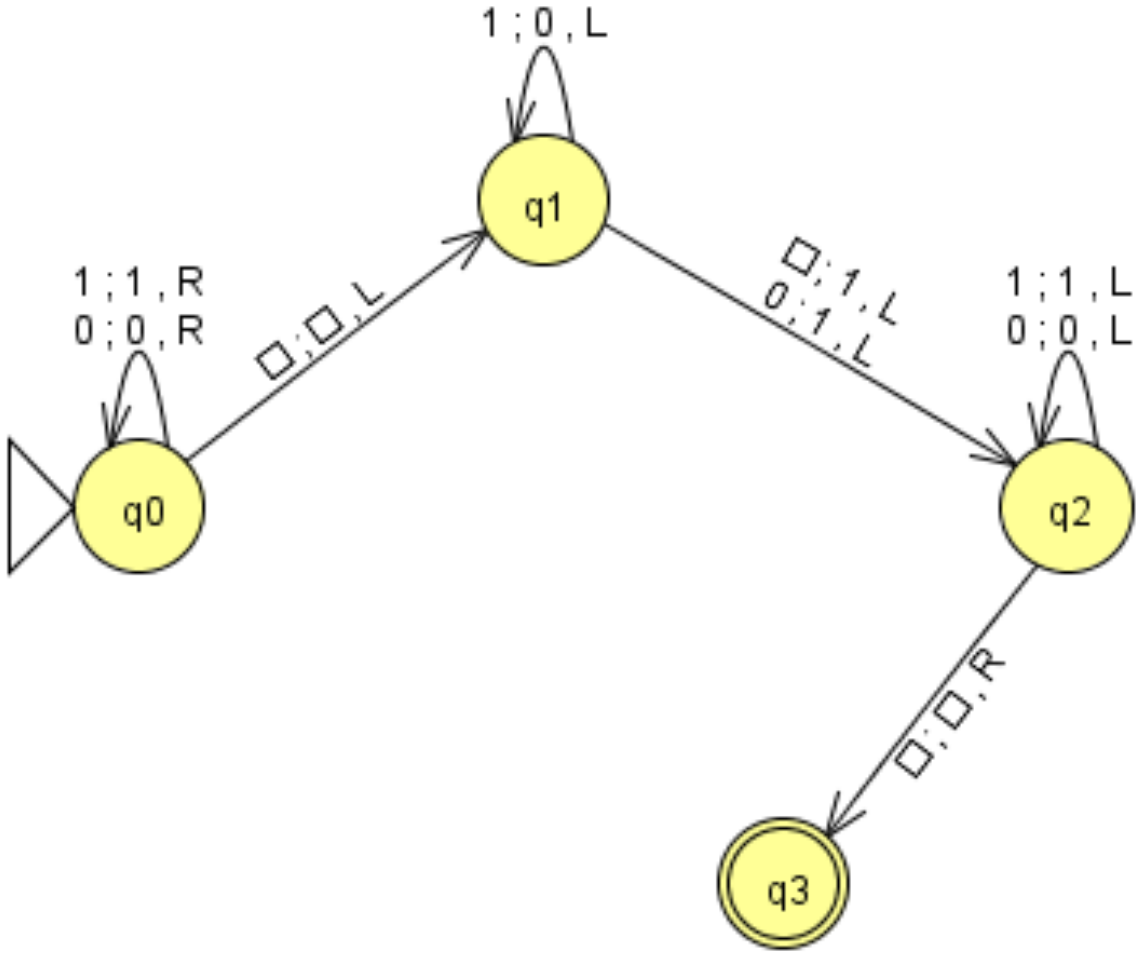
$a^n b^m \rightarrow b^m a^n$



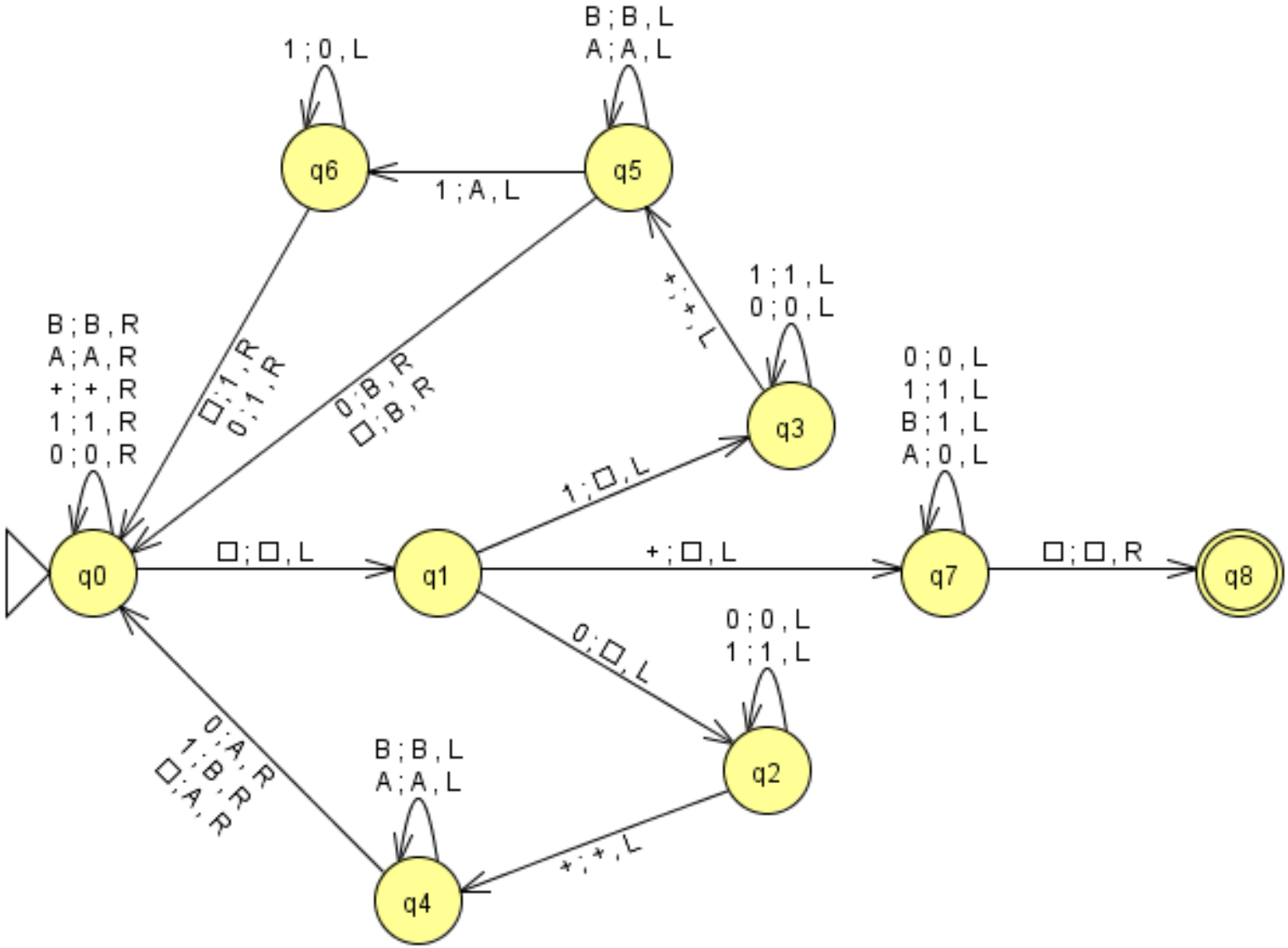
Predecessor in binary



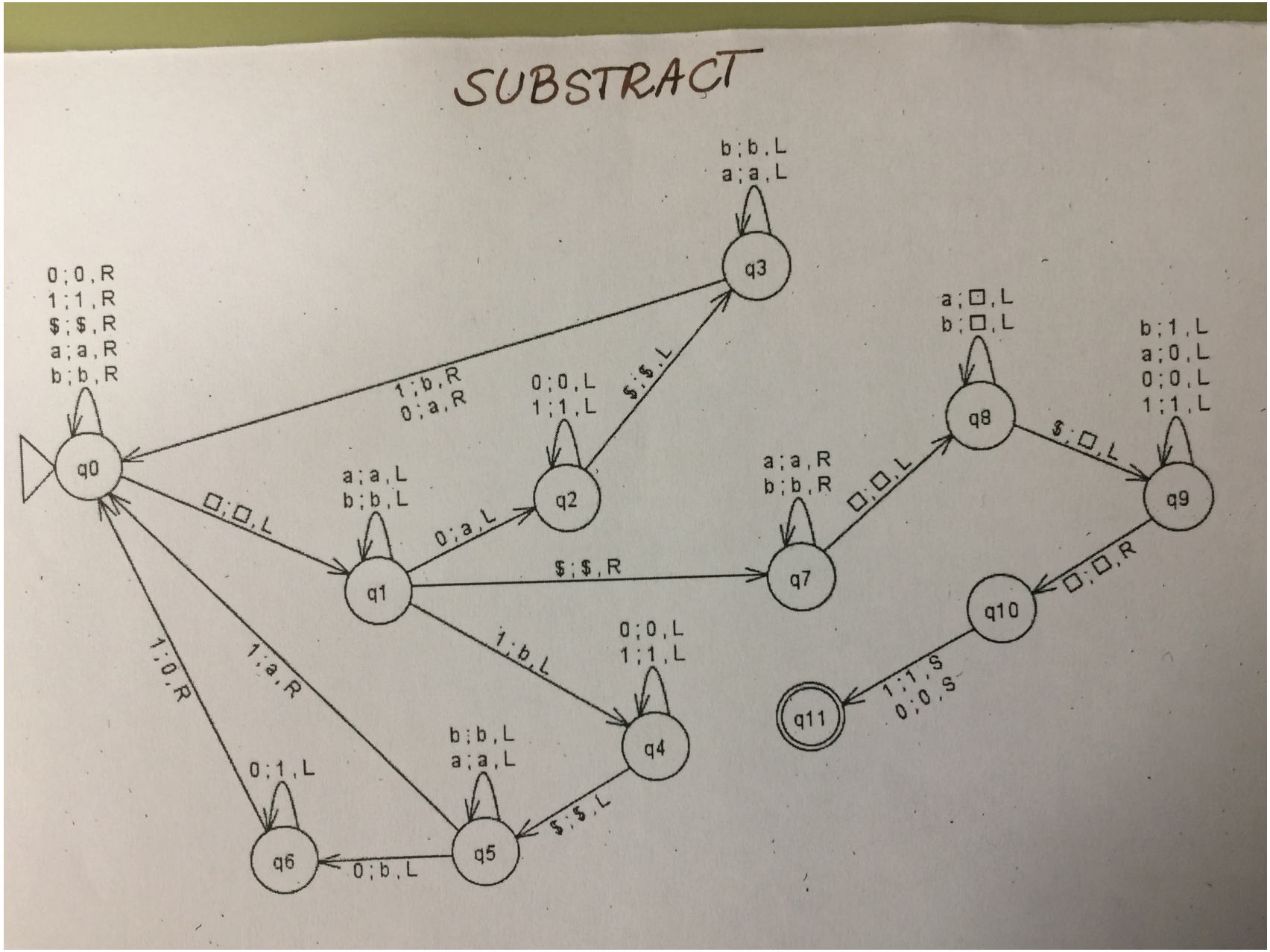
Successor in binary



Binary adder

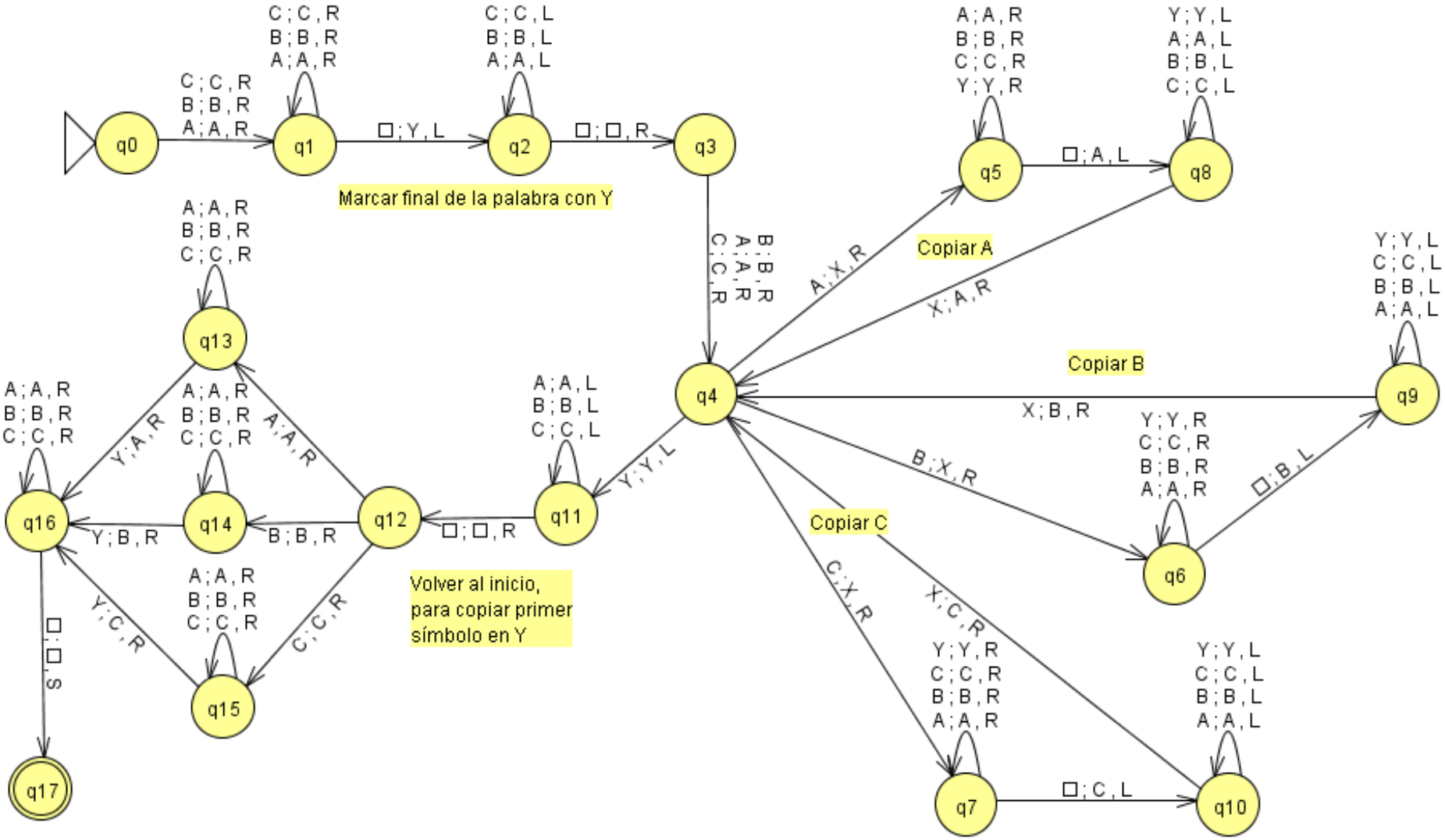


SUBSTRACT


0;0,R
1;1,R
$;$,R
a;a,R
b;b,R
q0
1;b,R
0;a,R
q3
b;b,L
a;a,L
0;0,L
1;1,L
$;$,L
q2
a;a,L
b;b,L
□;□,L
0;a,L
q1
$;$,R
q7
a;a,R
b;b,R
□;□,L
q8
a;□,L
b;□,L
$;□,L
q9
b;1,L
a;0,L
0;0,L
1;1,L
q10
□;□,R
q11
1;1,S
0;0,S
1;0,R
1;a,R
1;b,L
0;0,L
1;1,L
q4
b;b,L
a;a,L
$;$,L
q5
0;1,L
q6
0;b,L

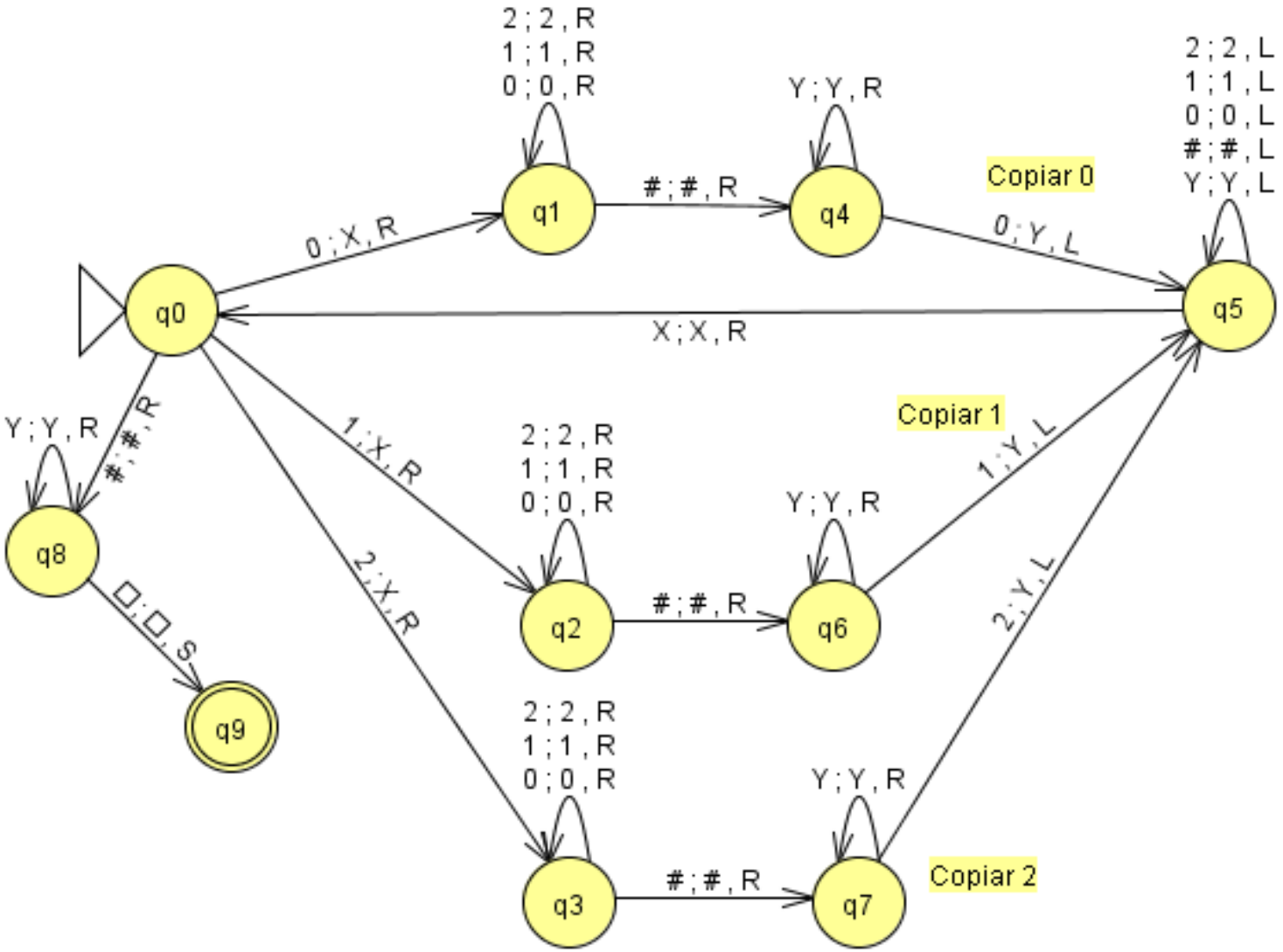
Copier

Copies a string over the alphabet {A,B,C}. No separation character between original and copy



Comparator

Input: two words over the alphabet {0,1,2}, separated by the symbol #
Output: Acceptance if the words are equal.
Example: b2101#2101b accepted



Accept palindrome

$\Sigma=\{a,b\}$