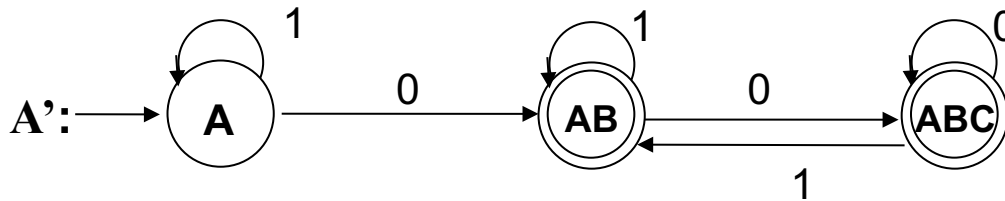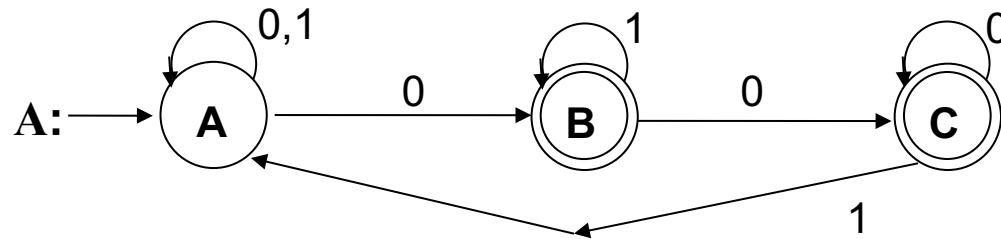# Assignment # 4.1

1.   Convert the following NFA to an equivalent DFA.

Assignment # 4.2

2.   Convert the DFA you developed in #1 to a regular expression, first by using either the GNFA (or state ripping) or R_{ij}^k approach, and then by using **regular equations**. You must show all steps in each part of this solution. Other solutions will be posted later.

$A = \lambda + A1 = 1^*$

$AB = A0 + ABC\ 1 + AB1 = (1^*0 + ABC1)1^*$

$ABC = AB0 + ABC1 = 1^*00 + ABC(1^+0 + 1) = 1^*00(1^+0 + 1)^*$

$L = (1^*0 + 1^*00(1^+0 + 1)^*1)^* + 1^*00(1^+0 + 1)^*$

By the way, $L = 1^*0(0+1)^*$ because AB and ABC can be merged

Assignment # 4.3 (DFA Later)

	a	b	c
>1	2	3	6
2	5	2	1
3	2	4	5
4	5	4	1
5	5	2	4
6	5	4	2

	>1	2	3	4	5
2	2,5X' 2,3X'' 1,6 X'				
3	3,4X'' 5,6	2,5X' 2,4 1,5X'			
4	2,5X' 3,4X'' 1,6 X'		2,5X' 1,5X'		
5	X	X	X	X	
6	X	X	X	X	2,4