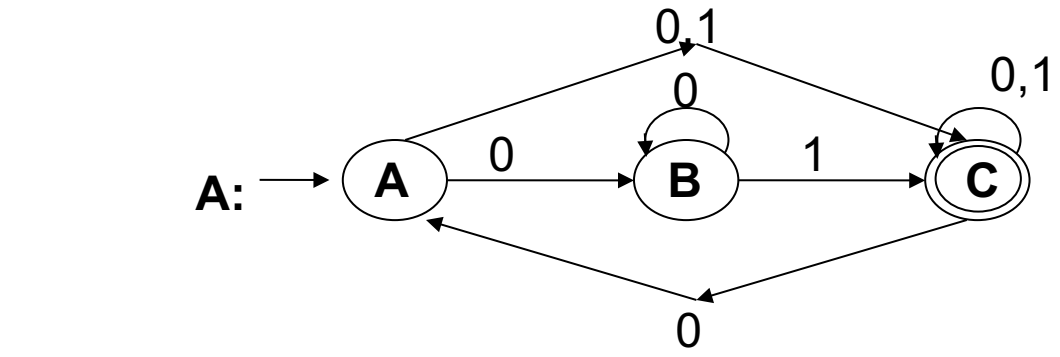
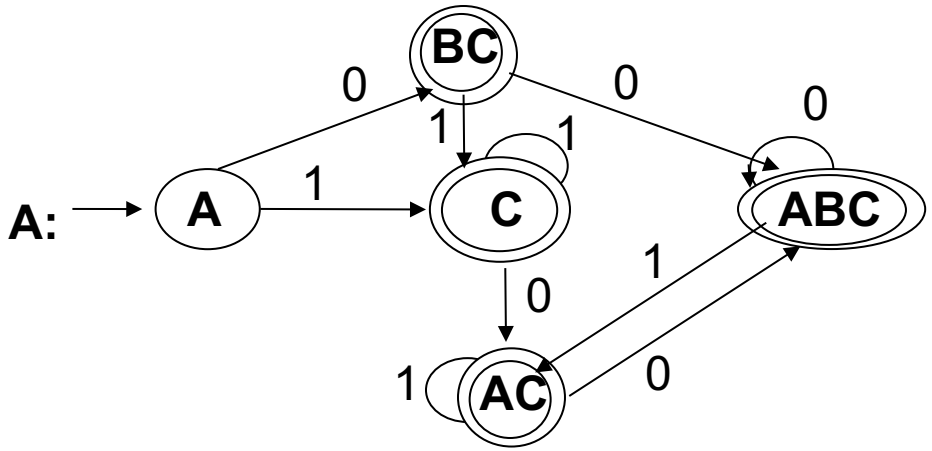
Assignment # 4.1 Key

Convert the following NFA to an equivalent DFA.





Yes, we know this can be reduced to 2 states.

Assignment # 4.2 Key (partial)

A = λ
C = A1 + BC1 + C1
BC = A0
AC = C0 + AC1
ABC = BC0 + AC0 + ABC(0+1)

BC = 0
C = 1+01+C1 = (1+01)1*
AC = (1+01)1*0+AC1=(1+01)1*01*
ABC = 00+(1+01)1*01*0+ABC(0+1) = (00+(1+01)1*01*0)(0+1)*
L=0+(1+01)1*+(1+01)1*01*+(00+(1+01)1*01*0)(0+1)*
=0+(1+01)(1*+1*01*)(λ+1)(0+1)*+00(0+1)*
=0+(1+01)(0+1)*+00(0+1)*
=$(0+1)^+$

Assignment # 4.3

3. a.) Minimize the number of states in the following DFA, showing the determination of incompatible states (table on right).

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

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

b.) States are: <1,3>, <2,4>, <5>, <6> (Can show DFA in Help Session)