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CSC 106 Assignment 2

1. a)

A	B	C	D
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

b)

c)

d)
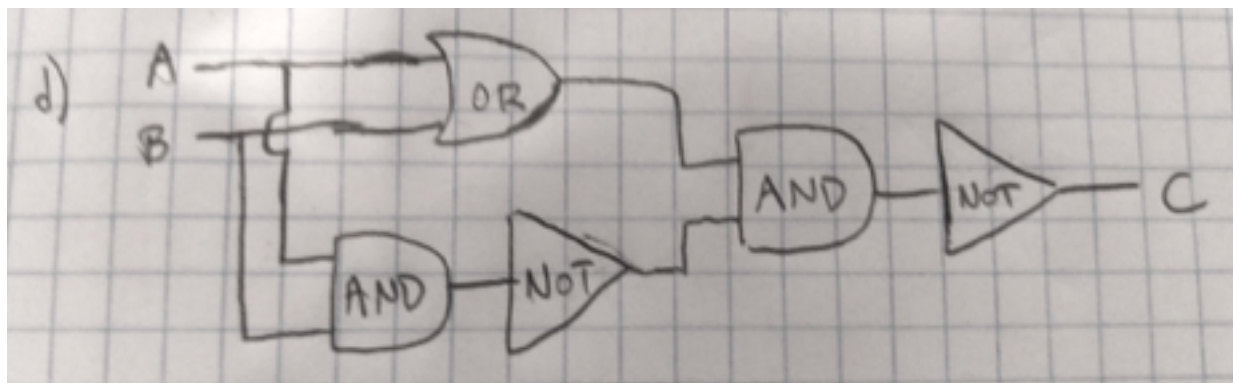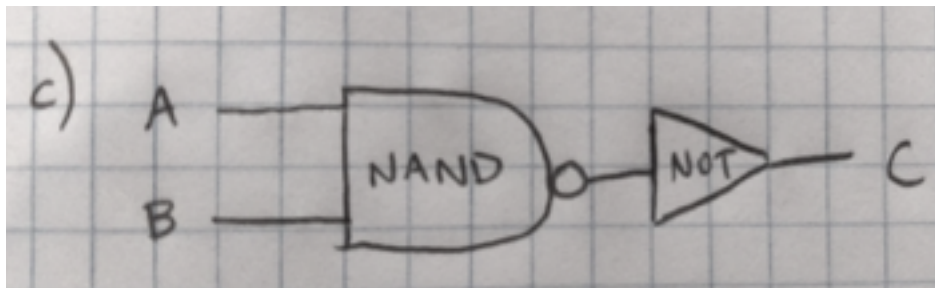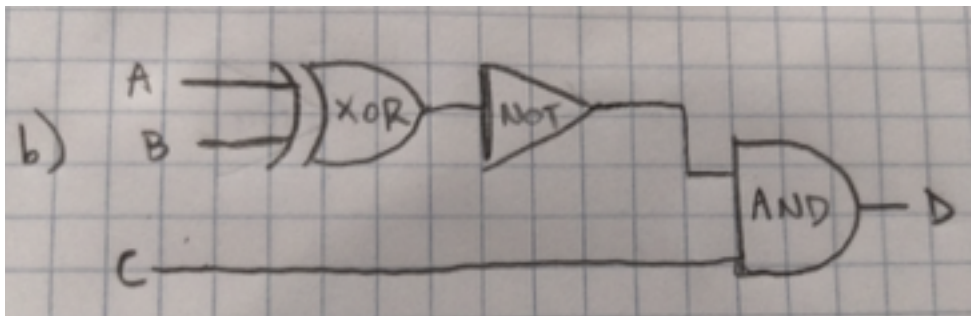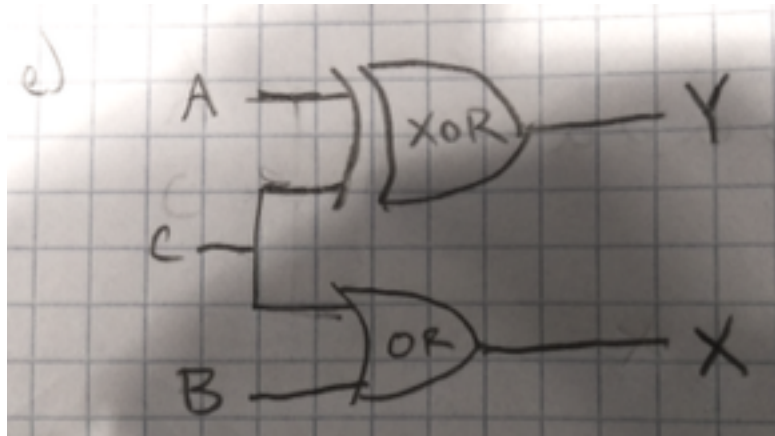
2. a) 831568 in base 10 = 11001011000001010000 in base 2

b) 20 bits were needed to represent part a

c) The largest number representable in unsigned binary using 20 bits is 11111111111111111111 = 20^{20} -1 = 1048575.

3. a) A 5 character input which is accepted by the DFA: "ababa"

A 5 character input which is not accepted by the DFA: "aaaaa"

b)