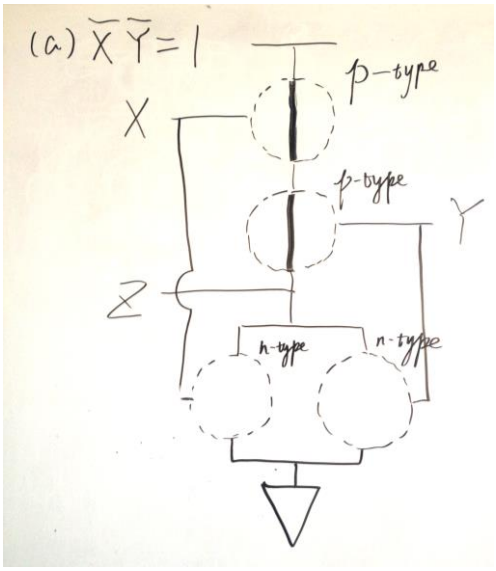
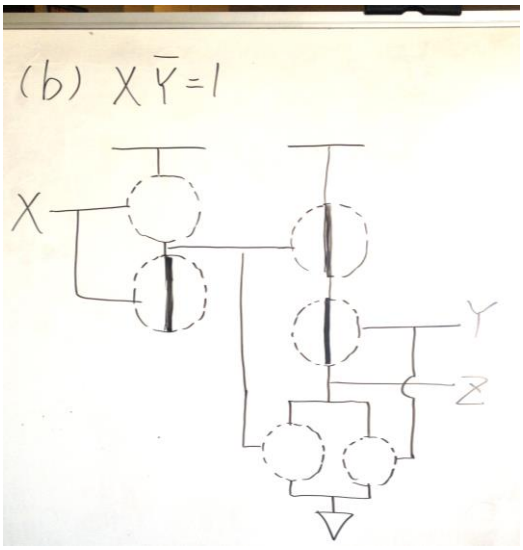
CS350_SECTION02_XIAQIN QIU

1.

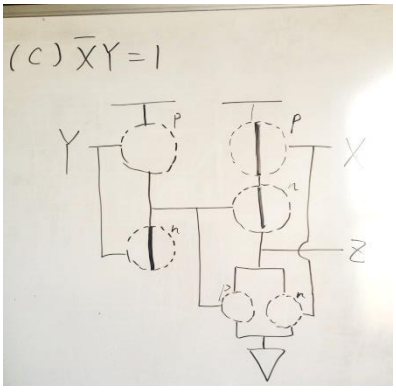
a) $\bar{X}\bar{Y} = 1$



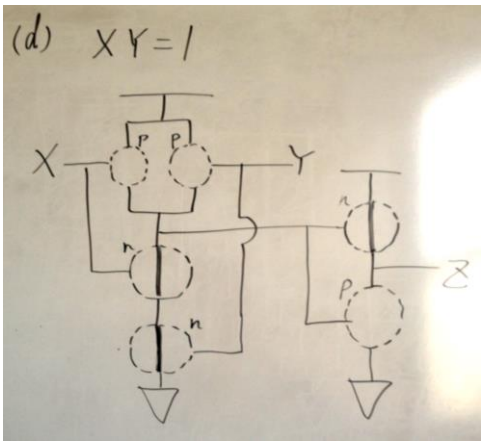
b) $X\bar{Y} = 1$



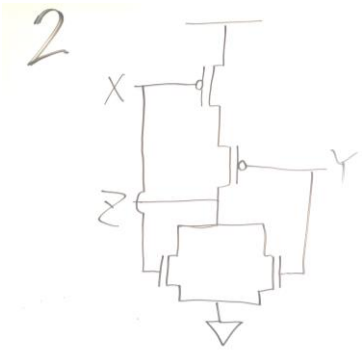
c) $\bar{X}Y = 1$



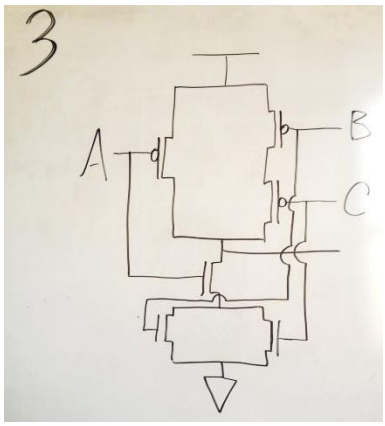
d) $XY = 1$



2.



3.

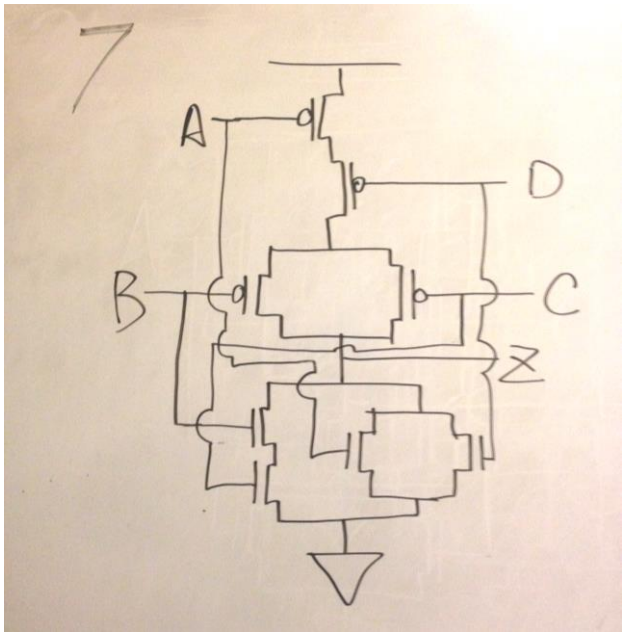


4. $\bar{A}(\bar{B} + \bar{C}) = 1$
5.
   a) $A + BC = 1$
   b) Yes, we get a legal circuit.
   c) It calculates $\bar{A}(\bar{B} + \bar{C})$
6.
   a) $A(B + C) = 1$
   b) No, we don't get a legal circuit.

c)

A	B	C	Status
0	0	0	Z=1
0	0	1	Z=1
0	1	0	Z=1
0	1	1	OPEN
1	0	0	OPEN
1	0	1	Z=0
1	1	0	Z=0
1	1	1	Z=0

7.

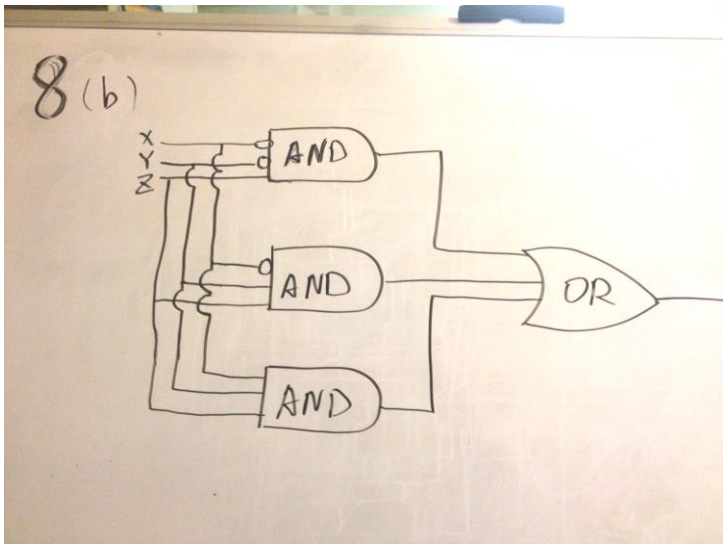


8.

a) $V = \overline{\overline{X\bar{Y}} + \overline{\bar{Z}}\,\overline{\bar{Y} + \bar{Z} + X}}$

b)

X	Y	Z	V
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

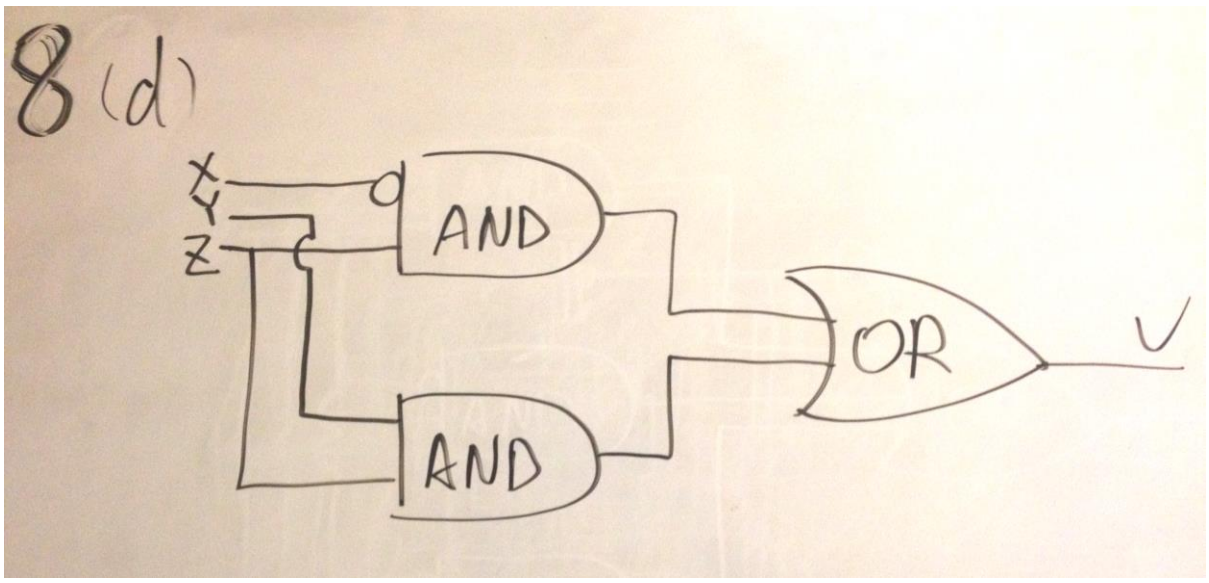


c)

XY	Z	
	0	1
00	0	1
10	0	0
11	0	1
01	0	1

$V = \bar{X}\,Z + Y\,Z$

d)



9.

a) The wire X inputs to choose B_0 or C_0 for the multiplexer.

b) C0: B0