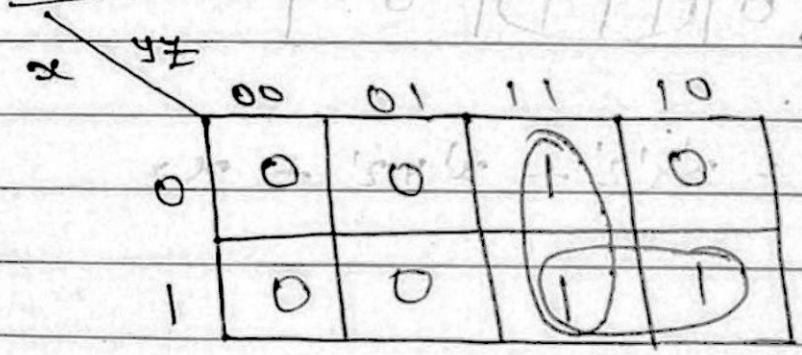
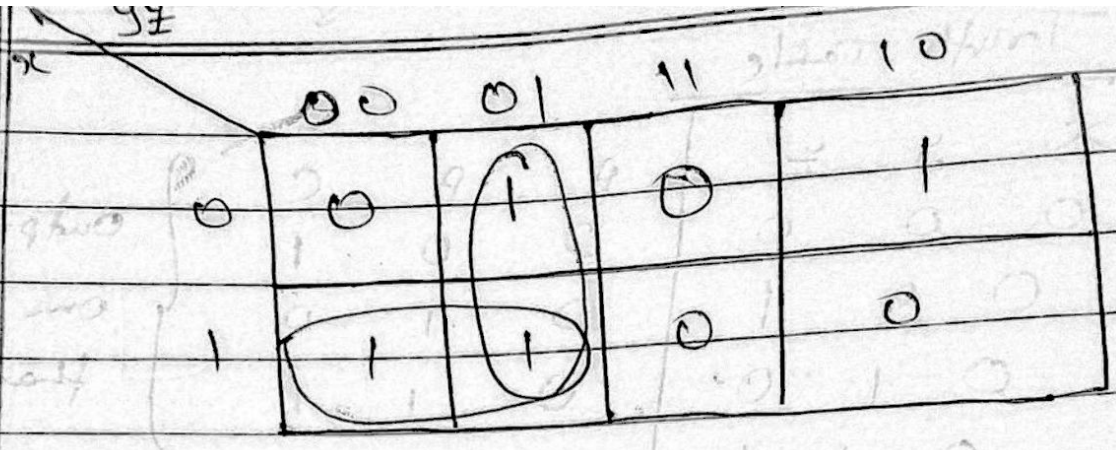
Truth Table

	x	y	z	A	B	C	
0	0	0	0	0	0	1	output is one greater than Input
1.	0	0	1	0	1	0	
2.	0	1	0	0	1	1	
3.	0	1	1	1	0	0	
4	1	0	0	0	1	0	output is two less than input.
5	1	0	1	0	1	1	
6	1	1	0	1	0	0	
7	1	1	1	1	0	1	

Kmap for A

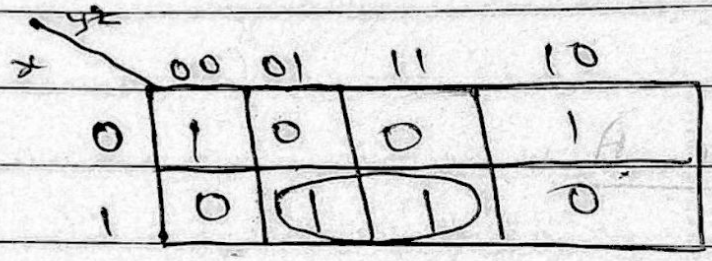


$A = xy + yz$



$$B = y'z + xy' + x'yz'$$

Kmap For C



$$C = x'y'z' + x'yz' + xz$$

Kmap Equations:

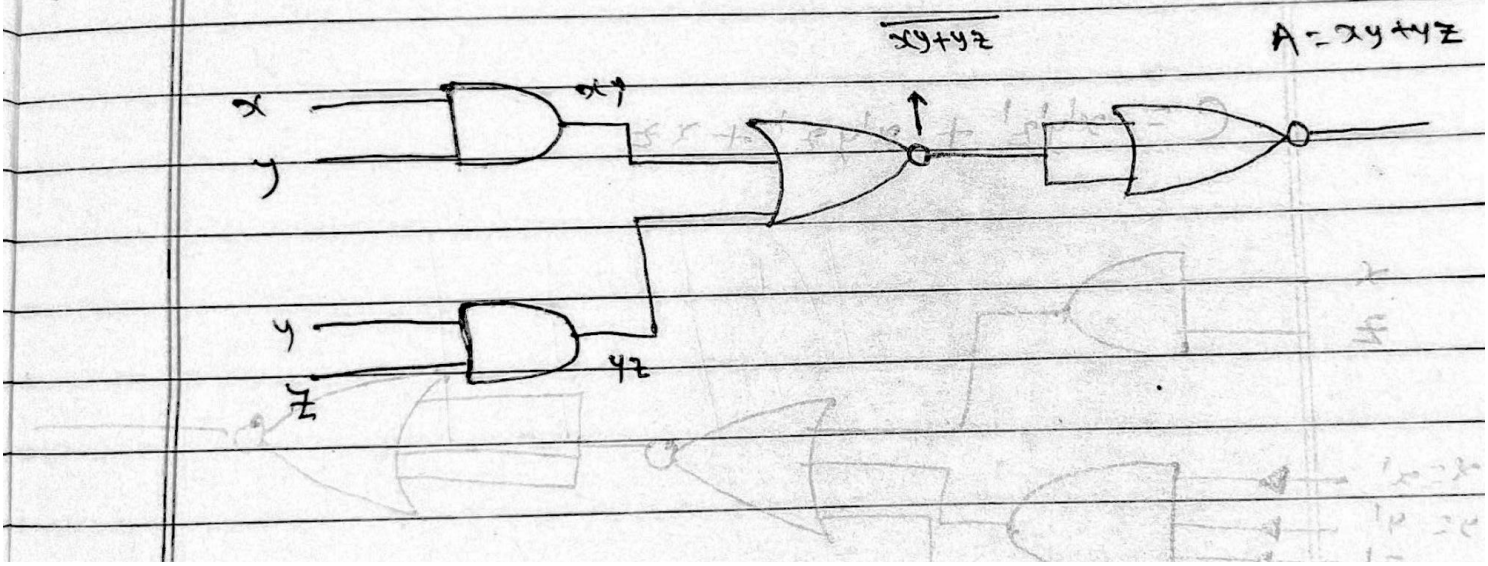
$$A = xy + yz$$

$$B = y'z + xy' + x'yz'$$

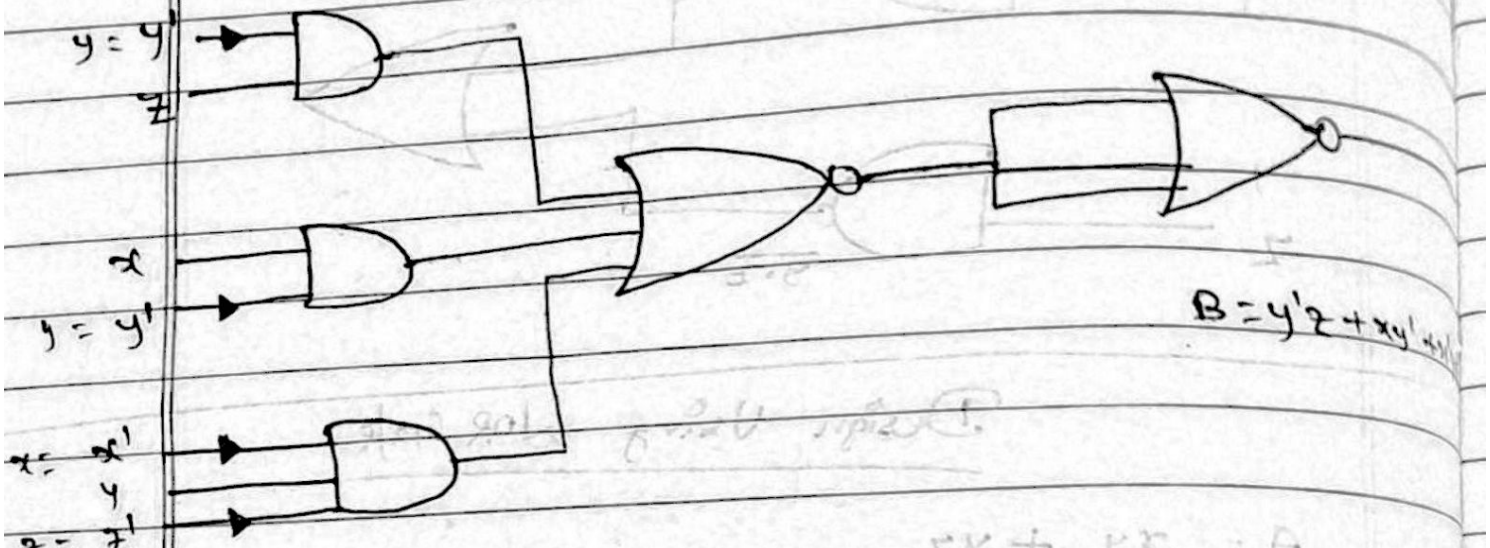
$$C = x'y'z' + x'yz' + xz$$

Design Using NOR Gate

$A = xy + yz$

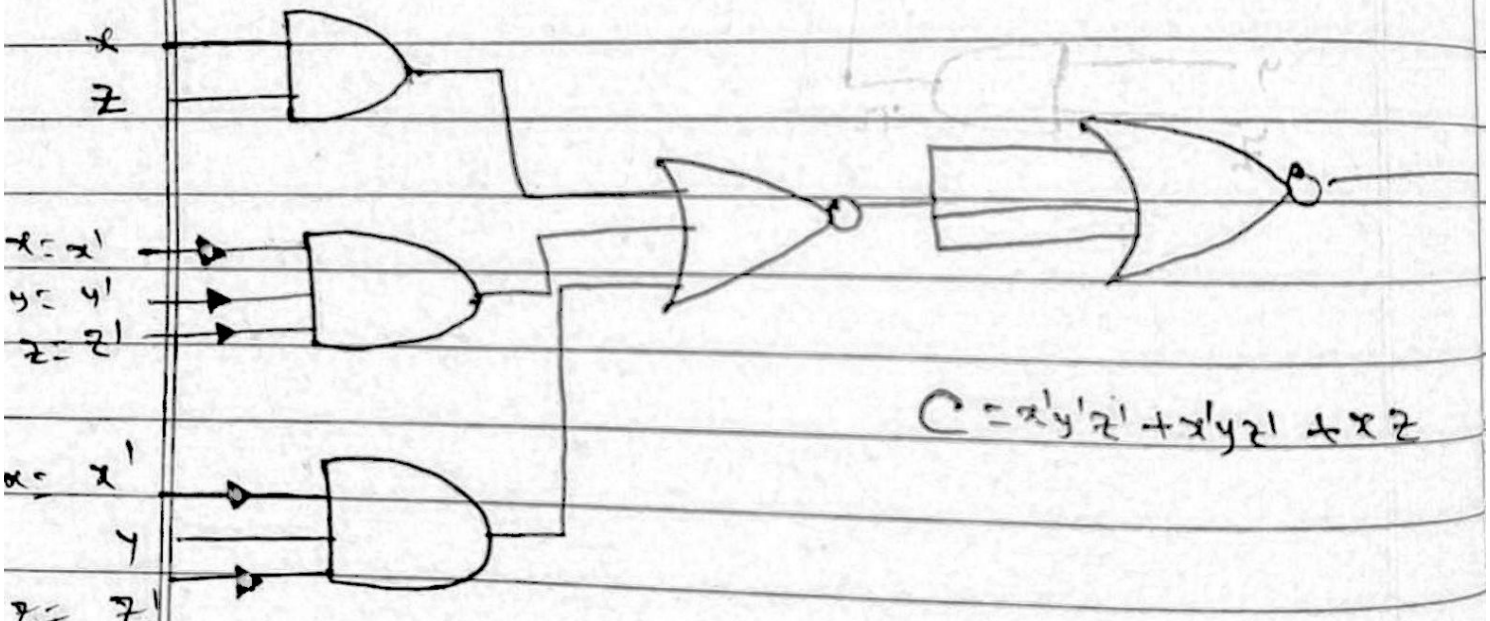


$B = y'z + xy' + x'yz'$



$B = y'z + xy' + x'yz'$

$C = x'y'z' + x'yz' + xz$



$C = x'y'z' + x'yz' + xz$