

# 이산수학 과제 #11 (11장) 부울 대수

2019101074 안용상

11장 부울대수 part 3

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2번 (1)  $(1+0)' + (0+1)$   
 $= 1' + 1 = 0 + 1 = 1$

(2)  $(0+1)' + (1+1)' + 0' + 1'$   
 $= 1' + 1' + 1 + 0$   
 $= 0 + 0 + 1 + 0 = 0 + 0 = 0$

4번

x	y	y'	x+y'	(x+y')·x
0	0	1	1	0
0	1	0	0	0
1	0	1	1	1
1	1	0	1	1

6번  $wx + (x+z)' + (y+z')$   
 $= wx + (x+z)' + (y+z')$   
 $= (z'+z') + (w+1) \cdot x + y$   
 $= z' + x + y$

8번

x	y	f(x,y)
0	0	0
0	1	1
1	0	0
1	1	1

$\Rightarrow x'y + xy$   
 $= y(x+x) = y$

10번  $f(x,y) = x'y + xy$

x \ y	0	1
0	0	1
1	0	1

y가 1일때, x와 상관없이 참이니  
 $f(x,y) = y$ 로 간주함.

12th  $f(x,y,z) = x(yz + y'z + x'yz + x'y'z')$

$x \backslash yz$	00	01	11	10
0			1	1
1		1	1	

$f(x,y,z) \Rightarrow = xz + x'y$

14th  $f(a,b,c) = a'b'c' + a'bc + ab'c' + abc = b'c' + bc$

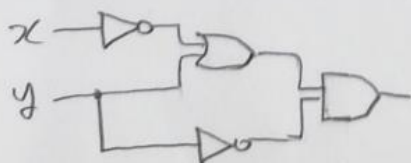
$a \backslash bc$	00	01	11	10
0	1		1	
1	1		1	

$f(a,b,c) \Rightarrow bc + b'c'$

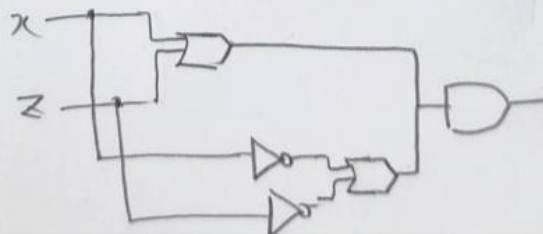
$x \backslash yz$	00	01	11	10
0			1	
1	1	1	1	1

$\Rightarrow x + yz$

18th (1)  $(x+y) \cdot y'$



(2)  $(x+y) \cdot (x'z')$



2041

$$\hookrightarrow p'g'rs + p'g rs' + pg'r's + pg'r s + pg r's + pg r s$$

$$= p'g'rs + p'g rs' + pg's (r+r) + pg s (r+r)$$

$$= p'g'rs + p'g rs' + pg's + pg s$$

$$= p'g'rs + p'g rs' + ps \cdot (g' + g)$$

$$= p'g'rs + p'g rs' + ps$$