

Ex 10 03

1- $A + B = \overline{AB}$

$-A + -B = -1(AB) = \overline{AB}$

$\overline{AB} = -1(AB) = -A + -B$

2- $[(A+B) \cdot C]' + [D \cdot (C+B)]' \equiv A' \cdot B' + C' + D' \Leftrightarrow$

$\overline{(A+B) \cdot C} + \overline{D \cdot (C+B)} \equiv \overline{A \cdot B} + \overline{C} + \overline{D} \Leftrightarrow$

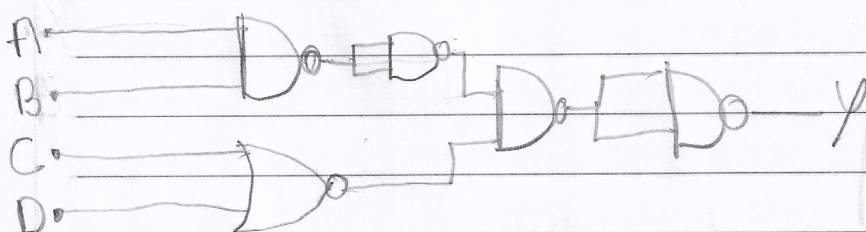
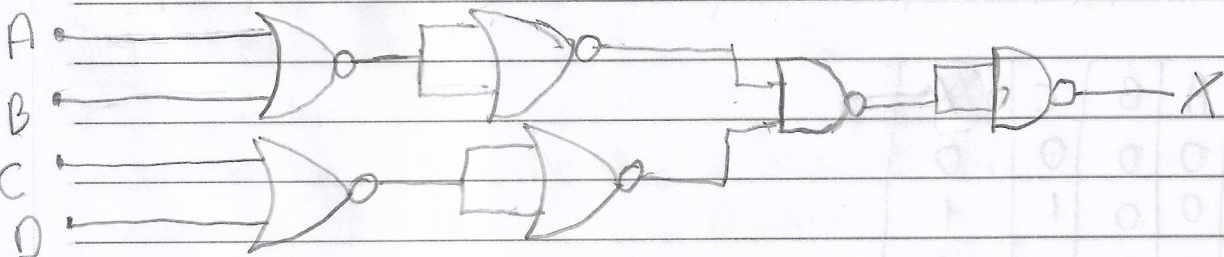
$[\overline{(A+B)} + \overline{C}] + \overline{D} + \overline{(C+B)} \equiv \overline{A \cdot B} + \overline{C} + \overline{D} \Leftrightarrow$

$\overline{A \cdot B} + \overline{C} + \overline{D} + \overline{C \cdot B} \equiv \overline{A \cdot B} + \overline{C} + \overline{D} \Leftrightarrow$

$\overline{AB} + \overline{D} + \overline{C} + \overline{C \cdot B} \equiv \overline{A \cdot B} + \overline{C} + \overline{D} \Leftrightarrow$

$\overline{AB} + \overline{C} + \overline{D} \equiv \overline{A \cdot B} + \overline{C} + \overline{D} \quad \text{OK}$

3- $X = (A + B) \cdot (C + D)$



$$4- S = [(A+B), C]' + [D, (C+B)]' = \text{Total}$$

A	B	C	D	A+B	C+B	$[(A+B), C]'$	$[D, (C+B)]'$	Total
0	0	0	0	0	0	1	1	1
0	0	0	1	0	0	1	1	1
0	0	1	0	0	1	1	1	1
0	0	1	1	0	1	1	0	1
0	1	0	0	1	1	1	1	1
0	1	0	1	1	1	1	0	1
0	1	1	0	1	1	0	1	1
0	1	1	1	1	1	0	0	0
1	0	0	0	1	0	1	1	1
1	0	0	1	1	0	1	1	1
1	0	1	0	1	1	0	1	1
1	0	1	1	1	1	0	0	0
1	1	0	0	1	1	1	1	1
1	1	0	1	1	1	1	0	1
1	1	1	0	1	1	0	1	1
1	1	1	1	1	1	0	0	0

S-	A	B	C	X
	0	0	0	0
	0	0	1	1
	0	1	0	0
	0	1	1	1
	1	0	0	0
	1	0	1	1
	1	1	0	0
	1	1	1	1

$$G- \quad S = \underbrace{[(A.C)' + D + B]}_P + \underbrace{C.(A.C.D)}_W = \text{Total}$$

A	B	C	D	(A.C)'	P	n	S	W	Total
0	0	0	0	1	1	0	1	0	0
0	0	0	1	1	1	0	1	0	0
0	0	1	0	1	1	0	1	1	1
0	0	1	1	1	1	0	1	1	1
0	1	0	0	1	1	0	1	0	0
0	1	0	1	1	1	0	1	0	0
0	1	1	0	1	1	0	1	1	1
0	1	1	1	1	1	0	1	1	1
1	0	0	0	1	1	0	1	0	0
1	0	0	1	1	1	0	1	0	0
1	0	1	0	0	0	1	1	1	1
1	0	1	1	0	1	0	0	0	0
1	1	0	0	1	1	0	1	0	0
1	1	0	1	1	1	0	1	0	0
1	1	1	0	0	0	0	1	1	1
1	1	1	1	0	1	0	0	0	0