Quiz 4 Sandra Calderón 1001991658

1. $A \uparrow A = \overline{A \cdot A} = \bar{A}$

$A \uparrow B = \overline{AB}$

$(A \uparrow B) \uparrow (A \uparrow B) = \overline{(A \uparrow B)(A \uparrow B)} = \overline{\bar{A}B\ \bar{A}B} = AB$

$\bar{A} \uparrow (AB) = \overline{\bar{A}(AB)}$

$(A \uparrow A) \uparrow (((A \uparrow B) \uparrow (A \uparrow B)) \uparrow ((A \uparrow B) \uparrow (A \uparrow B))) = A$

2. $A \uparrow A = \bar{A}$, $B \uparrow B = \bar{B}$

$(A \uparrow A) \downarrow (B \uparrow B) = \bar{A} \downarrow \bar{B} = \overline{\bar{A} + \bar{B}} = AB$

$(\bar{A} \downarrow \bar{A}) \uparrow (\bar{B} \downarrow \bar{B}) = A \uparrow B = \overline{AB}$

3.

A	B	f_1	f_3	f_4	$f_1 + f_3 + f_4$
T	T	T	F	F	T
T	F	F	F	F	F
F	T	F	T	F	T
F	F	F	F	T	T

4.

A	B	$A \to B$	$\bar{B} \to \bar{A}$
0	0	1	1
0	1	1	1
1	0	0	0
1	1	1	1

5.

C	A	B	A+B	C(A+B)	$\bar{C} + \overline{AB}$
0	0	0	0	0	1
0	0	1	1	0	1
0	1	0	1	0	1
0	1	1	1	0	1
1	0	0	0	0	0
1	0	1	1	1	1
1	1	0	1	1	1
1	1	1	1	1	1

6.

A	B	AB	$\overline{AB}$
0	0	0	1
0	1	0	0
1	0	0	0
1	1	1	0

7.

A	B	A+B	$\bar{A} + \bar{B}$
0	0	0	1
0	1	1	1
1	0	1	1
1	1	1	0

8.

A	B	$A \to B$	$\bar{B} \to \bar{A}$
0	0	1	1
0	1	1	1
1	0	0	0
1	1	1	1