

Derive Boolean Expression from Truth Table

1.

A	B	C	Q	Boolean Equation
0	0	0	1	$\overline{A} * \overline{B} * \overline{C}$
1	0	0	0	
0	1	0	0	
1	1	0	1	$A * B * \overline{C}$
0	0	1	0	
1	0	1	0	
0	1	1	1	$\overline{A} * B * C$
1	1	1	0	

Boolean Expression for system:

$$\overline{A} * \overline{B} * \overline{C} + A * B * \overline{C} + \overline{A} * B * C$$

.....

2.

A	B	C	Q	Boolean Equation
0	0	0	0	
1	0	0	0	
0	1	0	1	$\overline{A} * B * \overline{C}$
1	1	0	0	
0	0	1	0	
1	0	1	1	$A * \overline{B} * C$
0	1	1	0	
1	1	1	1	$A * B * C$

Boolean Expression for system:

$$\overline{A} * B * \overline{C} + A * \overline{B} * C + A * B * C$$

.....

3.

A	B	C	D	Q	Boolean Equation
0	0	0	0	0	
1	0	0	0	0	
0	1	0	0	0	
1	1	0	0	0	
0	0	1	0	1	$\overline{A} \cdot \overline{B} \cdot C \cdot \overline{D}$
1	0	1	0	0	
0	1	1	0	1	$\overline{A} \cdot B \cdot C \cdot \overline{D}$
1	1	1	0	0	
0	0	0	1	0	
1	0	0	1	0	
0	1	0	1	0	
1	1	0	1	1	$A \cdot B \cdot \overline{C} \cdot D$
0	0	1	1	0	
1	0	1	1	0	
0	1	1	1	1	$\overline{A} \cdot B \cdot C \cdot D$
1	1	1	1	0	

Boolean Expression for system:

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

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