

K-Maps

Directions: Simplify the Boolean Expressions using a Truth Table and a K-map.

1. $Q = A + \overline{(A*B)}$

Truth Table

A	B	
0	0	
0	1	
1	0	
1	1	

A \ B	0	1
0		
1		

Boolean Expression: _____

2. $Q = \overline{(A*B)}(\overline{A} + B)(B + \overline{B})$

A	B	
0	0	
0	1	
1	0	
1	1	

A \ B	0	1
0		
1		

Boolean Expression: _____

$$3. Q = (A + C)(A*B + A*\overline{B}) + A*C + C$$

A	B	C	
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

A	BC			
	00	01	11	10
0				
1				

Boolean Expression: _____

$$4. Q = A(A + \overline{B} * C) + A(\overline{B} + C)$$

A	B	C	
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

A	BC			
	00	01	11	10
0				
1				

Boolean Expression: _____