

Karnaugh Maps

Task 1

Watch the video and answer these questions:

1. Why is the sequence **00 01 11 10**?
2. What are the 2 rules for determining a simplified statement using K-Maps?
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3. What does this logic statement represent:

$$F = A'B + BC$$

4. What does this logic statement represent:

$$F = AB \otimes BC$$

Task 2

For each challenge below, complete the K-MAP and produce the simplified logic statement.

Challenge 1

#	A	✓	#	B	✓	#	C	✓	0	✓
	0			0			0		1	
	0			0			1		1	
	0			1			0		1	
	0			1			1		0	
	1			0			0		0	
	1			0			1		1	
	1			1			0		1	
	1			1			1		0	

K-MAP

		A	
		0	1
BC	00		
	01		
	11		
	10		

Simplified Logic Statement

output =

Challenge 2

#	A	✓	#	B	✓	#	C	✓	0	✓
	0			0			0		0	
	0			0			1		0	
	0			1			0		0	
	0			1			1		1	
	1			0			0		0	
	1			0			1		1	
	1			1			0		0	
	1			1			1		0	

K-MAP

		BC			
A		00	01	11	10
0					
1					

Simplified Logic Statement

Challenge 3

#	A	✓	#	B	✓	#	C	✓	0	✓
	0			0			0		1	
	0			0			1		0	
	0			1			0		0	
	0			1			1		1	
	1			0			0		0	
	1			0			1		1	
	1			1			0		1	
	1			1			1		1	

K-MAP

BC
A

Simplified Logic Statement