Karnaugh maps

Karnaugh maps are used to facilitate the simplification of Boolean algebra functions

Expression A V B					
	A	A	A		
B		0	1		
B	0	0	1		
B	1	1	1		

Simplified: The expression is A is true or B is true, A = 1 or B = 1

We place a rectangle around any pair with two 1's in it. The rectangle's heading e.g. A 1 will give the statement A = 1 and the row, say B 1 will give statement B = 1. St combined it would be A= 1 AND/OR (depending on original expression) B = 1

Here we separate the expression by the OR's. We get left side A^ B with right side A ^ ¬B. We put each part into the expression.

Expression A V ¬B					
	A	A	A		
B		0	1		
B	0	1	1		
B	1	0	1		

Simplified: The expression is B is False or A is true, B = 0 or A = 1

Here we can only put a rectangle around B 0 row and A 1 column. Expression is therefore B = 0 or A = 1.

Expression A ^ B V A ^ ¬B					
	A	A	A		
B		0	1		
B	0	0	1		
B	1	0	1		

Simplified: The only place a rectangle can be drawn is when A is true and so, expression = A (A = 1)

Expression ¬C ^ B V A ^ B V C					
	AB	AB	AB	AB	AB
C		00	01	11	10
C	0	0	1	1	0
C	1	1	1	1	1

Simplified : A V B