----------Logic----------

Board 1

1Y : - (a ^ b)

2Y : - ( b ^ c )

3Y : ( a ^ b )

4Y : - ( a ^ c )

Board 2

1Y : - ( - ( a ^ c ) ^ - (a ^ b) ^ - ( b ^ c ) )

2Y : - ( a ^ c ) ^ - (a ^ b) ^ - ( b ^ c )

3Y : - ( a ^ c ) ^ - (a ^ b)

4Y : - ( - ( a ^ c ) ^ - (a ^ b) )

Board 3

1Y : ( a ^ b ^ c )

2Y : - ( ( a ^ b ^ c ) ^ -Sum )

3Y : ( a ^ b )

4Y : - ( a ^ b ^ c )

-( a ^ b ^ c ) v Sum

Sum Final Form : - ( - ( a ^ c ) ^ - (a ^ b) ^ - ( b ^ c ) ) = ( a ^ c ) v (a ^ b) v ( b ^ c ) = Sum

Cout Final Form : ( ( a ^ b ^ c ) ^ -Sum ) = - ( -( a ^ b ^ c ) v Sum ) = ( a ^ b ^ c ) ^ - Sum