

The table beside is the truth table for 2-bit addition.
The inputs are the augend, $A_1 A_0$, and the addend, $B_1 B_0$.
The outputs are the sum $S_1 S_0$ and the carry C_1

Get the remainder of the quotients of the last number in your student ID and 3. Use it to define the outputs Y_1 , Y_2 and Y_3 for doing homework. For example, if remainder =2, then $Y_1 = S_0$, $Y_2 = C_0$ and $Y_3 = S_1$.

Output Remainder	Y_1	Y_2	Y_3
0	C_1	S_1	S_0
1	S_1	S_0	C_1
2	S_0	C_1	S_1

INPUTS				OUTPUTS		
A_1	A_0	B_1	B_0	C_1	S_1	S_0
0	0	0	0	0	0	0
0	0	0	1	0	0	1
0	0	1	0	0	1	0
0	0	1	1	0	1	1
0	1	0	0	0	0	1
0	1	0	1	0	1	0
0	1	1	0	0	1	1
0	1	1	1	1	0	0
1	0	0	0	0	1	0
1	0	0	1	0	1	1
1	0	1	0	1	0	0
1	0	1	1	1	0	1
1	1	0	0	0	1	1
1	1	0	1	1	0	0
1	1	1	0	1	0	1
1	1	1	1	1	1	0

1) Use the Boolean Algebra to simplify the equation for

$Y_1 =$

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2) Use the Karnaugh's Map to minimize the Y_2 and Y_3 .

$B_1 B_0$ $A_1 A_0$				

$Y_2 =$

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$B_1 B_0$ $A_1 A_0$				

$Y_3 =$

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