

Pre-Lab Submission Page

Half adder truth table

A	B	C	S	Decimal
0	0	0	0	0
0	1	0	1	1 ₁₀
1	0	0	1	1 ₁₀
1	1	1	0	2 ₁₀

$$C = A \cdot B$$

$$S = A' \cdot B + AB'$$

2-bit adder truth table

C_{in}	A_2A_1	B_2B_1	$C_{out} S_2 S_1$
0	00	00	000
0	00	01	001
0	01	01	010
0	10	01	011
0	10	10	100
1	10	10	101
1	11	11	111

Full adder truth table

C_{in}	A	B	C_{out}	S	Decimal
0	0	0	0	0	0
0	0	1	0	1	1 ₁₀
0	1	0	0	1	1 ₁₀
0	1	1	1	0	2 ₁₀
1	0	0	0	1	1 ₁₀
1	0	1	1	0	2 ₁₀
1	1	0	1	0	2 ₁₀
1	1	1	1	1	3 ₁₀

$$S = x'y'z + x'y'z' + xy'z' + xyz$$

$$C = xy + xz + yz$$

Decimal equivalent

C_{in}	A	B	Out
0	0	0	0
0	0	1	1
0	1	0	2 ₁₀
0	1	1	3 ₁₀
1	0	0	4 ₁₀
1	0	1	5 ₁₀
1	1	1	7 ₁₀