❖ Lab 1 : Breadboarding Circuits

Lab due May 13, 2023 10:37 PDT Completed

Design a *full adder*. The inputs are A, B, and C_{in}. The outputs are S and C_{out}. The full adder computes $\{C_{out}, S\} = A + B + C_{in}$. In other words, it sums the three inputs to produce a two-bit result, with S being the least significant bit and C_{out} being the most significant bit. C_{in} and C_{out} are called the carries. For example, if A = 1, B = 0, and C_{in} = 1, the result is $1 + 0 + 1 = 2_{10} = 10_2$. Thus, the sum is 0 and the carry out is 1. Although the logic for a full adder is in the textbook and many other places, please work it out yourself from first principles.

Full Adder Truth Table

1/1 point (graded)

Keyboard Help

Drag 0s and 1s to complete a truth table for the full adder.

Inputs			Outputs	
C_{in}	B	A	C_{out}	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Reset