

A	B	C	Boolean eqn	AND/or	NAND
0	0	0	0	0	0
1	0	0	1	1	1
0	1	0	0	0	0
1	1	0	0	0	0
0	0	1	1	1	1
1	0	1	1	1	1
0	1	1	1	1	1
1	1	1	1	1	1

~~This proves the circuits~~

This proves the circuits are functionally identical because the outputs are the same for every possible input combination. If they were not the same, then at least one of the possible combinations ~~was~~ of  $A, B, C$  would have a different output.