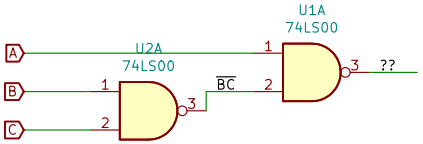
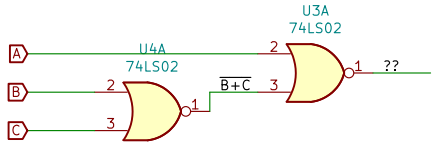
Proof of FAILURE



This is NOT a 3-input NAND function

A	B	C	$\overline{BC}$	??	$\overline{ABC}$
0	0	0	1	1	1
0	0	1	1	1	1
0	1	0	1	1	1
0	1	1	0	1	1
1	0	0	1	0	1
1	0	1	1	0	1
1	1	0	1	0	1
1	1	1	0	1	0

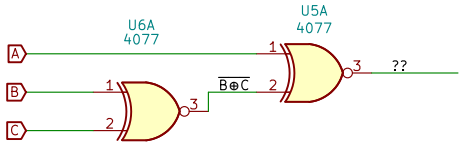
$$\overline{A(\overline{BC})} \;!=\; \overline{ABC}$$



This is NOT a 3-input NOR function

A	B	C	$\overline{B+C}$	??	$\overline{A+B+C}$
0	0	0	1	0	1
0	0	1	0	1	0
0	1	0	0	1	0
0	1	1	0	1	0
1	0	0	1	0	0
1	0	1	0	0	0
1	1	0	0	0	0
1	1	1	0	0	0

$$\overline{A+(\overline{B+C})} \;!=\; \overline{A+B+C}$$



This is NOT a 3-input XNOR gate

A	B	C	$\overline{B \oplus C}$	??	$\overline{A \oplus B \oplus C}$
0	0	0	1	0	1
0	0	1	0	1	0
0	1	0	0	1	0
0	1	1	1	0	1
1	0	0	1	1	0
1	0	1	0	0	1
1	1	0	0	0	1
1	1	1	1	1	0

This circuit is a 3-in XOR gate!!

$$\overline{A \oplus (\overline{B \oplus C})} \;!=\; \overline{A \oplus B \oplus C}$$

Sheet: /
File: 05-combinatorial-3-in-fails.sch

Title: Can Not Construct These 3-in Functions This Way!!

Size: USLetter	Date: 2019-09-07	**Rev: 1**
KiCad E.D.A. eeschema 5.1.5+dfsg1-2build2		Id: 1/1