

$$Y = A B \bar{C} \bar{D} + A B C D + A B C \bar{D}$$

$$Y = A B \bar{C} (\bar{D} + D) + A B C \bar{D}$$

$$Y = A B \bar{C} + A B C D$$

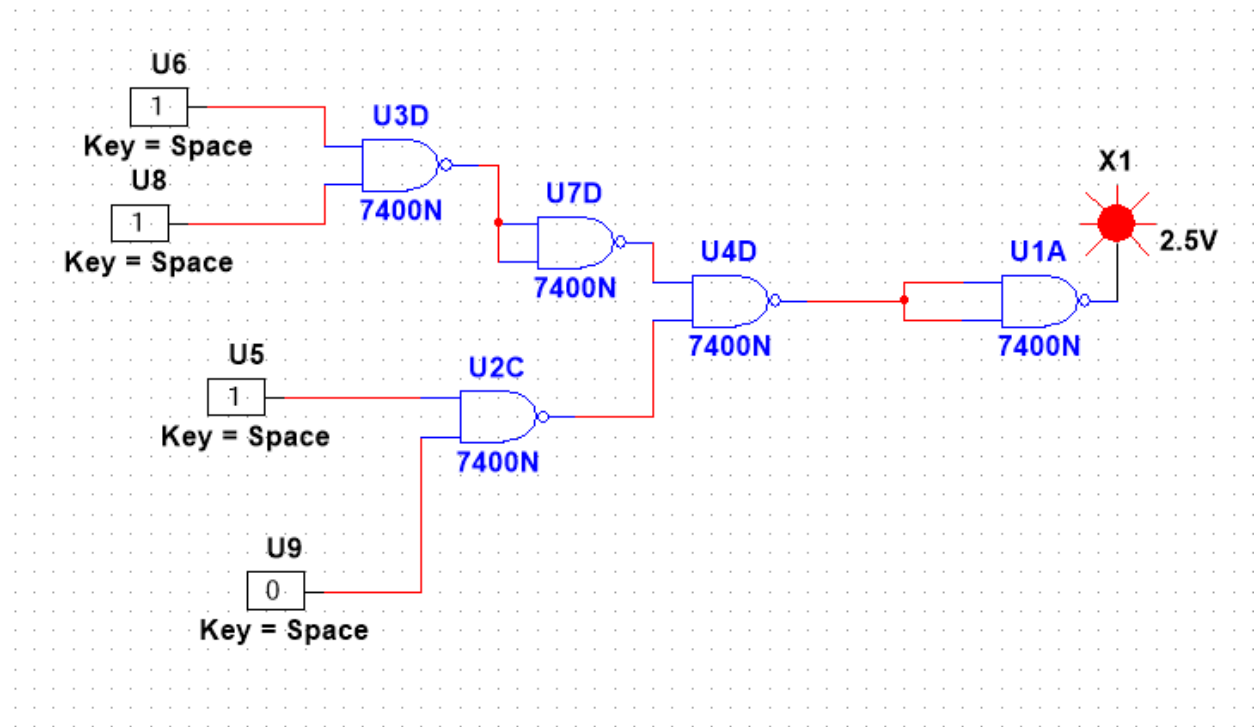
$$Y = A B (\bar{C} + C D)$$

$$Y = A B (\bar{C} + D)$$

$$Y = A B \bar{C} + A B D$$

$$Y = \overline{A B \bar{C} \cdot A B D}$$

REPLACED THE CIRCUIT WITH NAND GATES:



A	B	C	D	Y1
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0

1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

A	B	C	D	Y2
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0

0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

A	B	C	D	Y1	Y2
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	0	0	0
0	0	1	1	0	0

0	1	0	0	0	0
0	1	0	1	0	0
0	1	1	0	0	0
0	1	1	1	0	0
1	0	0	0	0	0
1	0	0	1	0	0
1	0	1	0	0	0
1	0	1	1	0	0
1	1	0	0	1	1
1	1	0	1	1	1
1	1	1	0	1	1
1	1	1	1	0	0

Q1: In (Table 3), does Y1 equal Y2? If Y1 and Y2 are equal explain why and if they are not equal, explain why in your lab report?

Yes, Y1 is equal to Y2,
because we compared both circuits and tested them out, the logic hasn't changed which resulted in the same values for Y1 and Y2 in the truth table above which proves that $Y1=Y2$.