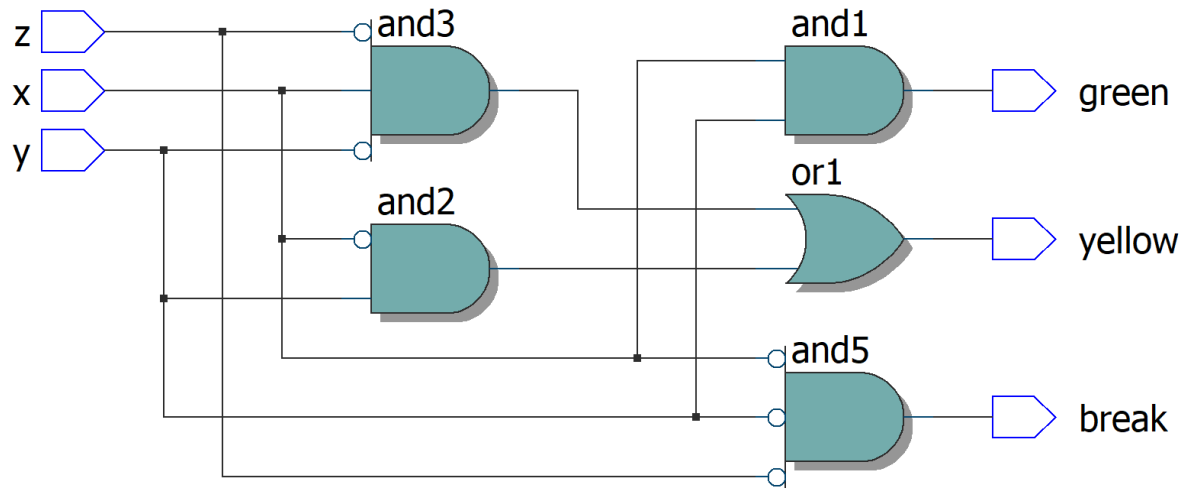
1.

a)



b)

b)

x	y	z	break	yellow	green	m
0	0	0	1	0	0	m_0
0	0	1	0	0	0	m_1
0	1	0	0	1	0	m_2
0	1	1	0	1	0	m_3
1	0	0	0	1	0	m_4
1	0	1	0	0	0	m_5
1	1	0	0	0	1	m_6
1	1	1	0	0	1	m_7

Note: I didn't include the borders of the distance such as 2, 3, 10, 11.

break = $m_0 = M_1 . M_2 . M_3 . M_4 . M_5 . M_6 . M_7$

yellow = $m_2 + m_3 + m_4 = M_0 . M_1 . M_5 . M_6 . M_7$

green = $m_6 + m_7 = M_0 . M_1 . M_2 . M_3 . M_4 . M_5$

2) $(a+c)(a+b')(b+c) = (a+b')(b+c)$

$(aa + ab' + b'c)(b+c) = ab + ac + ab' + b'c$

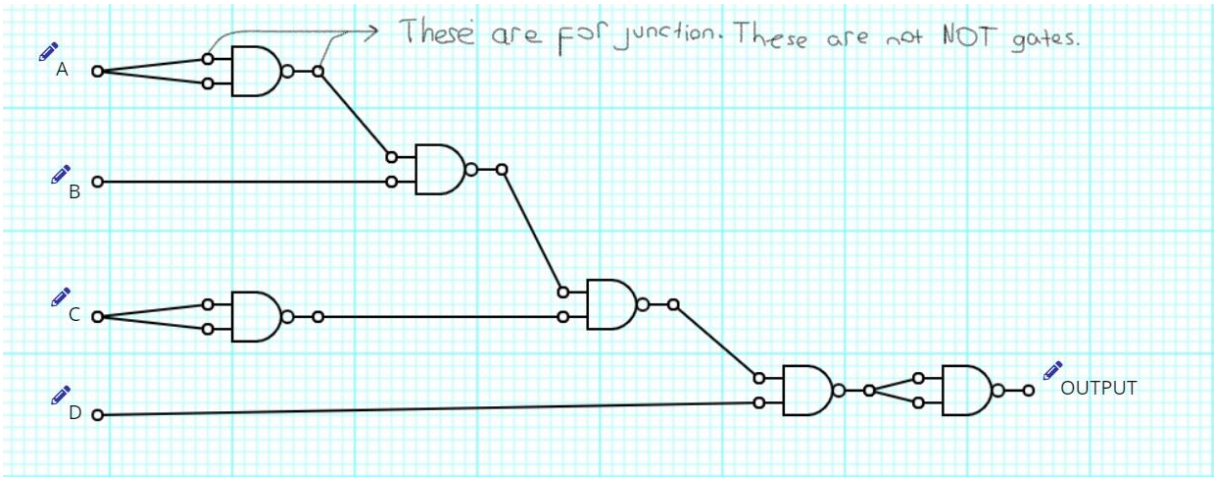
$ab + ac + ab'b + ab'c + b'bc + b'cc = ab + ac + b'c$

$ab + ac + ab'c + b'c = ab + ac + b'c$

$ab + ac + (b'c)(a+1) = ab + ac + b'c$

$ab + ac + b'c = ab + ac + b'c$

3)



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