JOHANNES GUTENBERG UNIVERSITÄT MAINZ

Technische Informatik: Abgabe 3

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Exercise 1

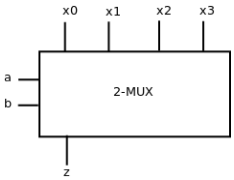
a)

not solved yet

Exercise 2

not solved yet

Exercise 3: MUX is universal



1. AND: $x_0 = x_1 = x_2 = 0$ and $x_3 = 1$ yields output $z = a \wedge b$
2. OR: $x_0 = 0$ and $x_1 = x_2 = x_3 = 1$ yields output $z = a \vee b$
3. NOT: since NOT is an unary operand $b = 0$ and $x_0 = 1, x_1 = 0, (x_2 = x_3 = 0)$ yields output $z = \neg a$

Exercise 4

x_i	y_3	y_2	y_1	y_0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

Not solved yet...