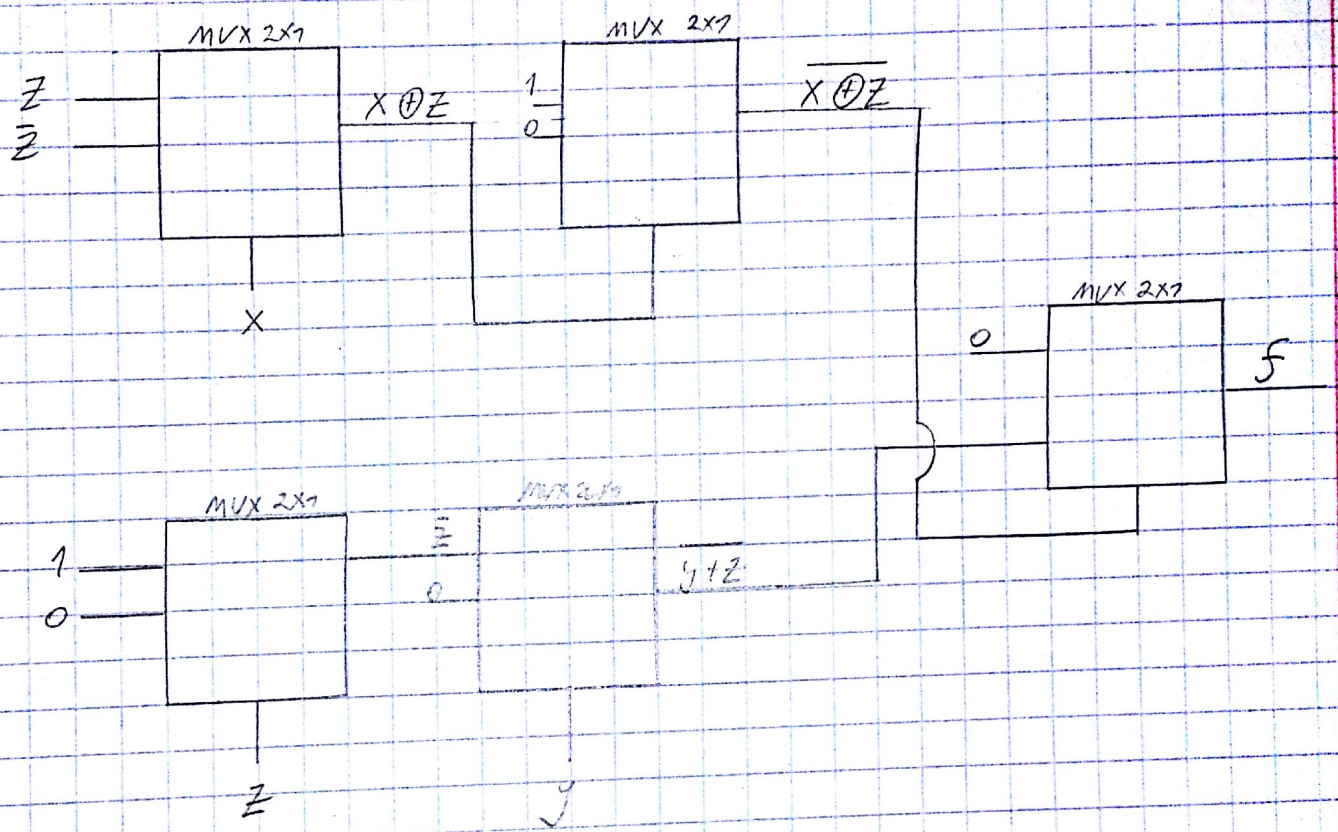
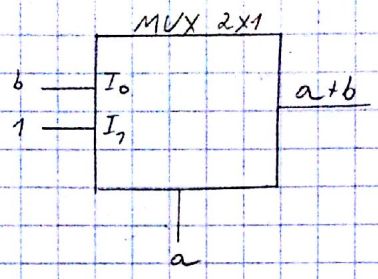
$f(xyz) = x \oplus z \cdot (y + z)$



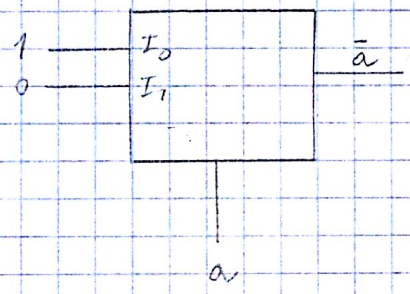
| | a | b | a+b |
|---|---|---|---|
| $I_0$ | 0 | 0 | 0 |
| | 0 | 1 | 1 |
| $I_1$ | 1 | 0 | 1 |
| | 1 | 1 | 1 |

(OR)



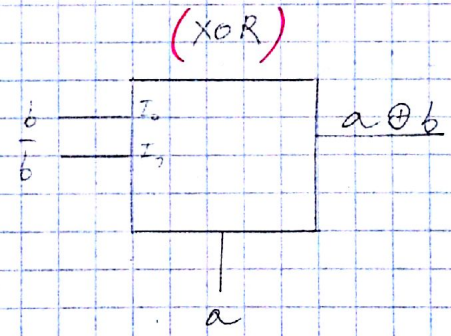

| | a | b | $\bar{a}$ |
|---|---|---|---|
| $I_0$ | 0 | 0 | 1 |
| | 0 | 1 | 1 |
| $I_1$ | 1 | 0 | 0 |
| | 1 | 1 | 0 |

(NOT)




| | a | b | $a \oplus b$ |
|---|---|---|---|
| $I_0$ | 0 | 0 | 0 |
| | 0 | 1 | 1 |
| $I_1$ | 1 | 0 | 1 |
| | 1 | 1 | 0 |

(XOR)




| | a | b | $\overline{a+b}$ |
|---|---|---|---|
| $I_0$ | 0 | 0 | 1 |
| | 0 | 1 | 0 |
| $I_1$ | 1 | 0 | 0 |
| | 1 | 1 | 0 |

(NOR)