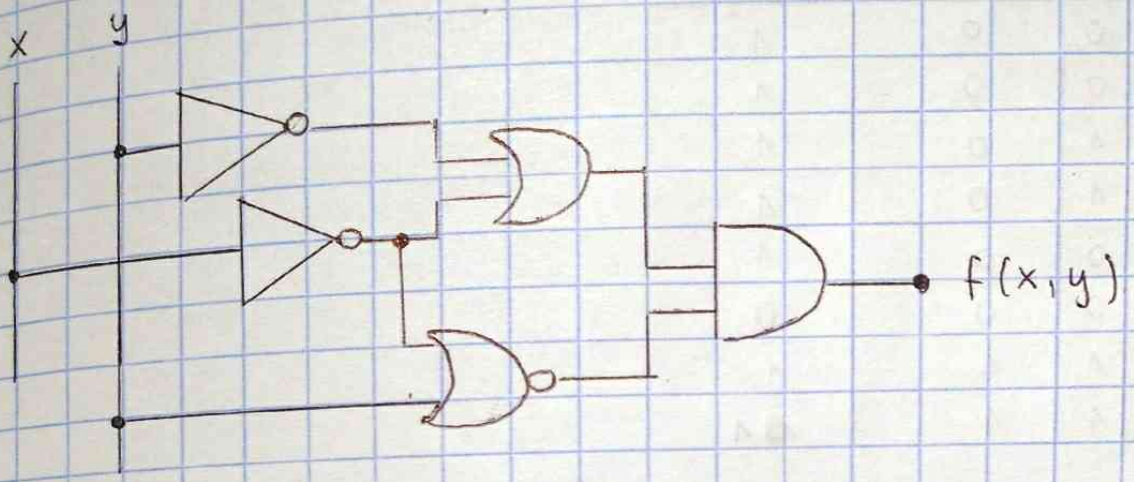
# Zadania domowe

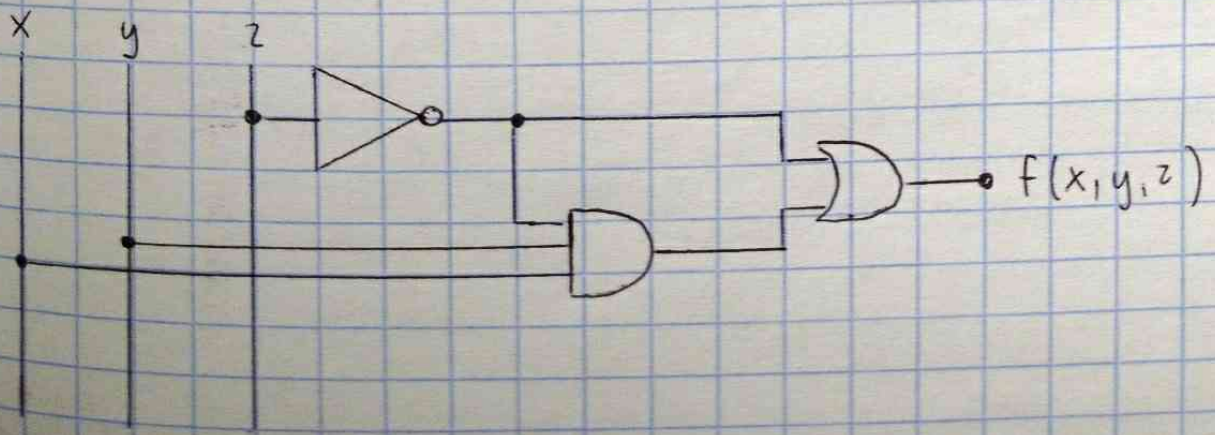
1) a) $f(x,y) = (\sim x \cup \sim y) \cap \sim(y \cup \sim x)$

| x | y | ~x | ~y | ~x ∪ ~y | ~(y ∪ ~x) | f(x,y) |
|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 |



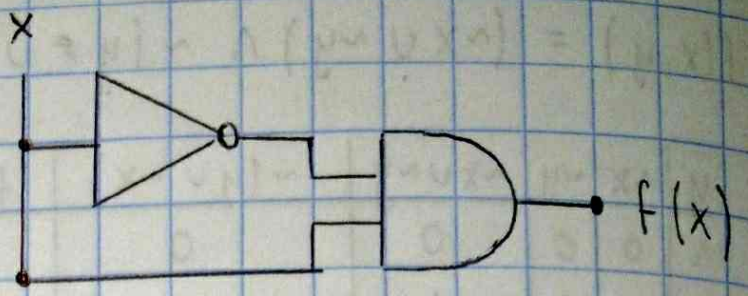

b) $f(x,y,z) = \sim z \cup (x \cap y \cap \sim z)$

| x | y | z | ~z | x ∩ y ∩ ~z | f(x,y,z) |
|---|---|---|---|---|---|
| 1 | 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 1 |



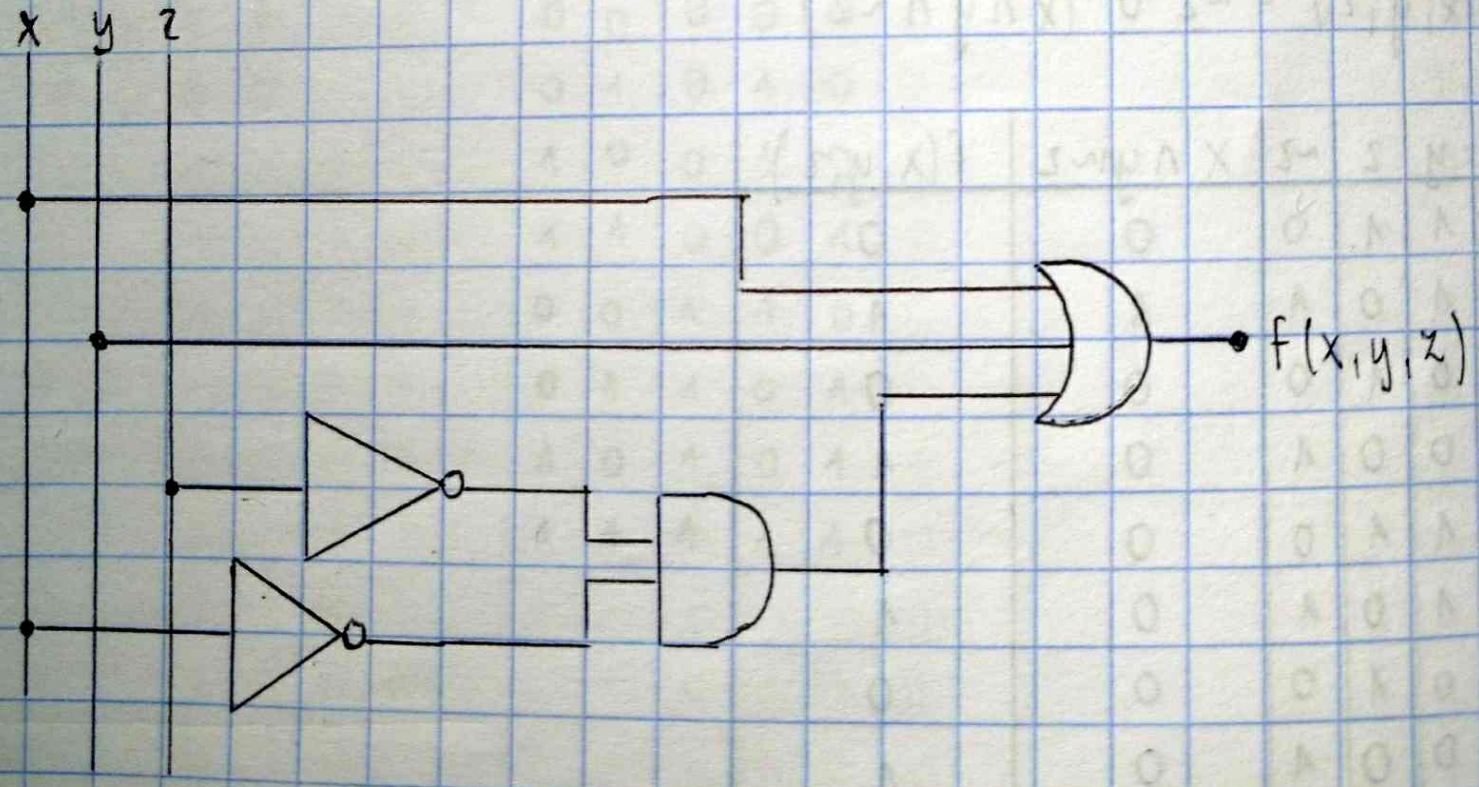
c) $f(x) = \sim x \cap x$

| $x$ | $\sim x$ | $\sim x \cap x$ |
|---|---|---|
| 1 | 0 | 0 |
| 0 | 1 | 0 |




d) $f(x,y,z) = x \cup y \cup (\sim x \cap \sim z)$

| $x$ | $y$ | $z$ | $\sim x$ | $\sim z$ | $\sim x \cap \sim z$ | $f(x,y,z)$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 |



3) $f(a,b,c) = \sim(a \wedge b \wedge c) \wedge (\sim a \vee \sim b \vee c) \wedge (a \wedge \sim c) \wedge (a \vee \sim b \vee c)$

| a | b | c | ~a | ~b | ~c | ~(a∧b∧c) | (~a∨~b∨c) | (a∧~c) | (a∨~b∨c) | f(a,b,c) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |

2)

| $a_i$ | $b_i$ | $c_{i-1}$ | $y_i$ | $c_i$ |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

wejście:
- $a_i$ - odjemna
- $b_i$ - odjemnik
- $c_{i-1}$ - pożyczka

wyjście:
- $y_i$ - różnica
- $c_i$ - przeniesienie