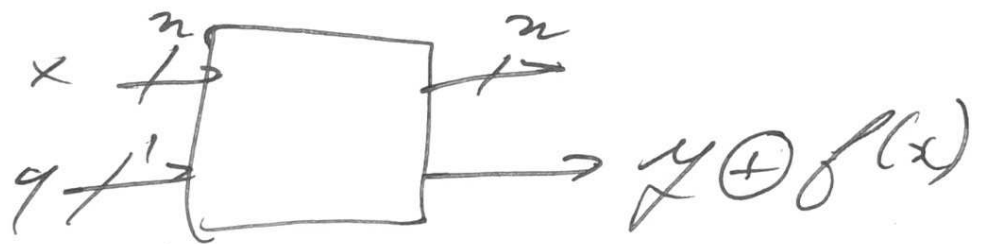


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MAKING ANY FUNCTION INTO A REVERSIBLE FUNCTION BY ADDING 1 MORE INPUT.



$n=2 \quad f(\vec{x}) = x_0 x_1$

$U_f \quad y' = y \oplus (x_0 x_1)$

CONSTANT $f(\vec{x}) = 0$

$U_f : y' = y \oplus f(x) = y$

BALANCED $f(x) = x_0$

$y' = y \oplus x_0$

$$x' = x \pmod{15}$$

x	x'
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14