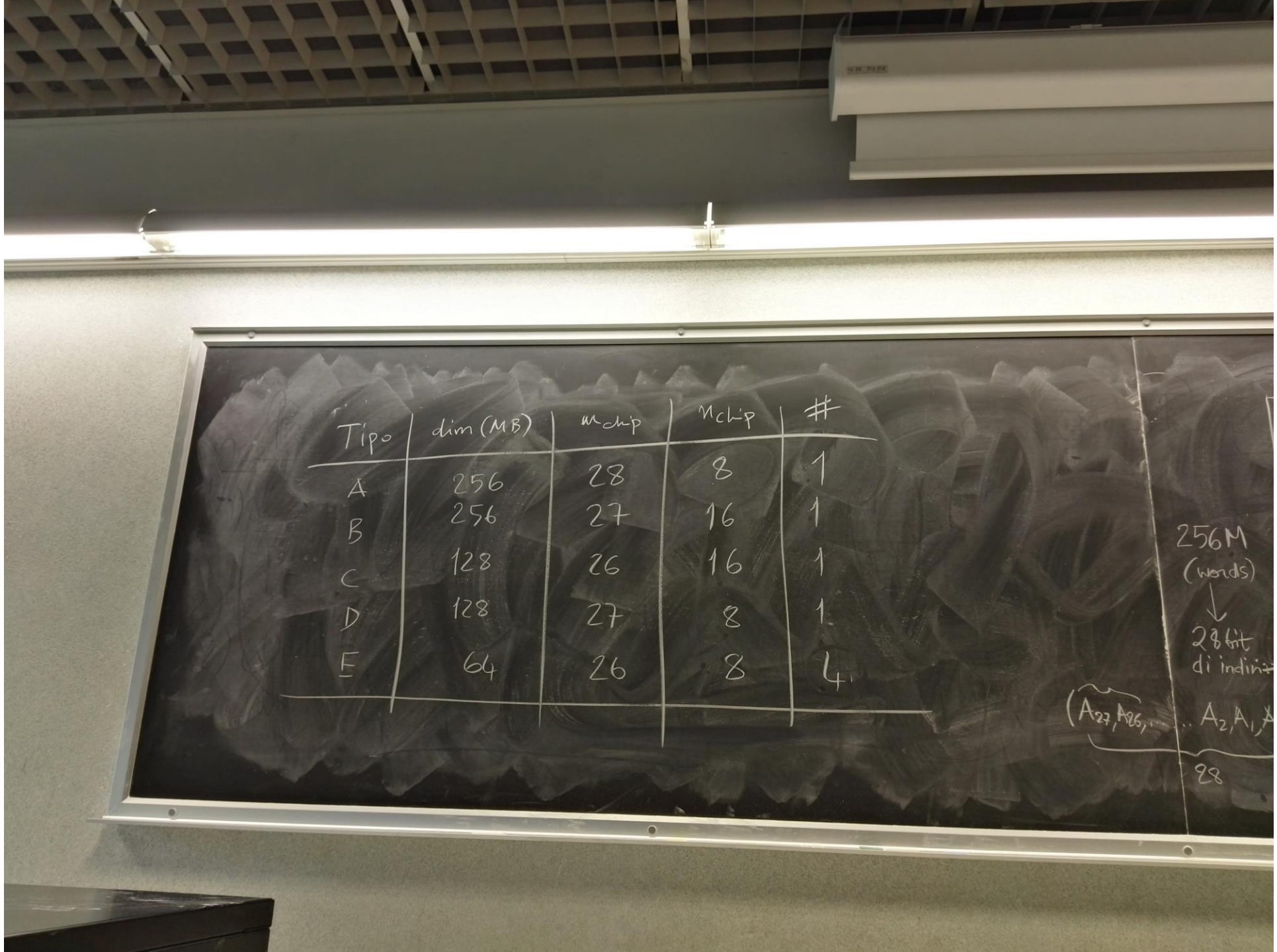


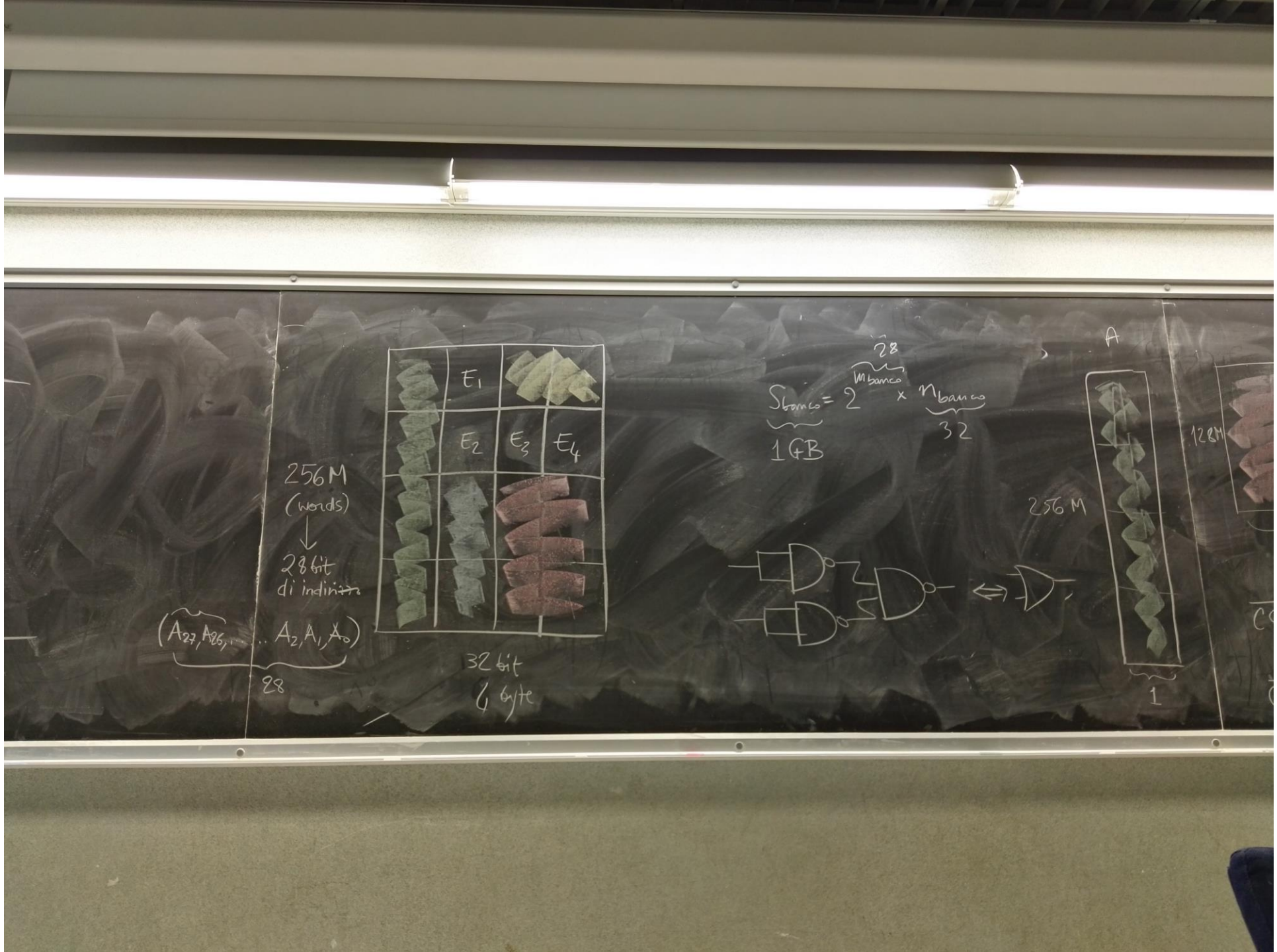
Tipo	dim (MB)	n_{chip}	m_{chip}	#
A	256	28	8	1
B	256	27	16	1
C	128	26	16	1
D	128	27	8	1
E	64	26	8	4

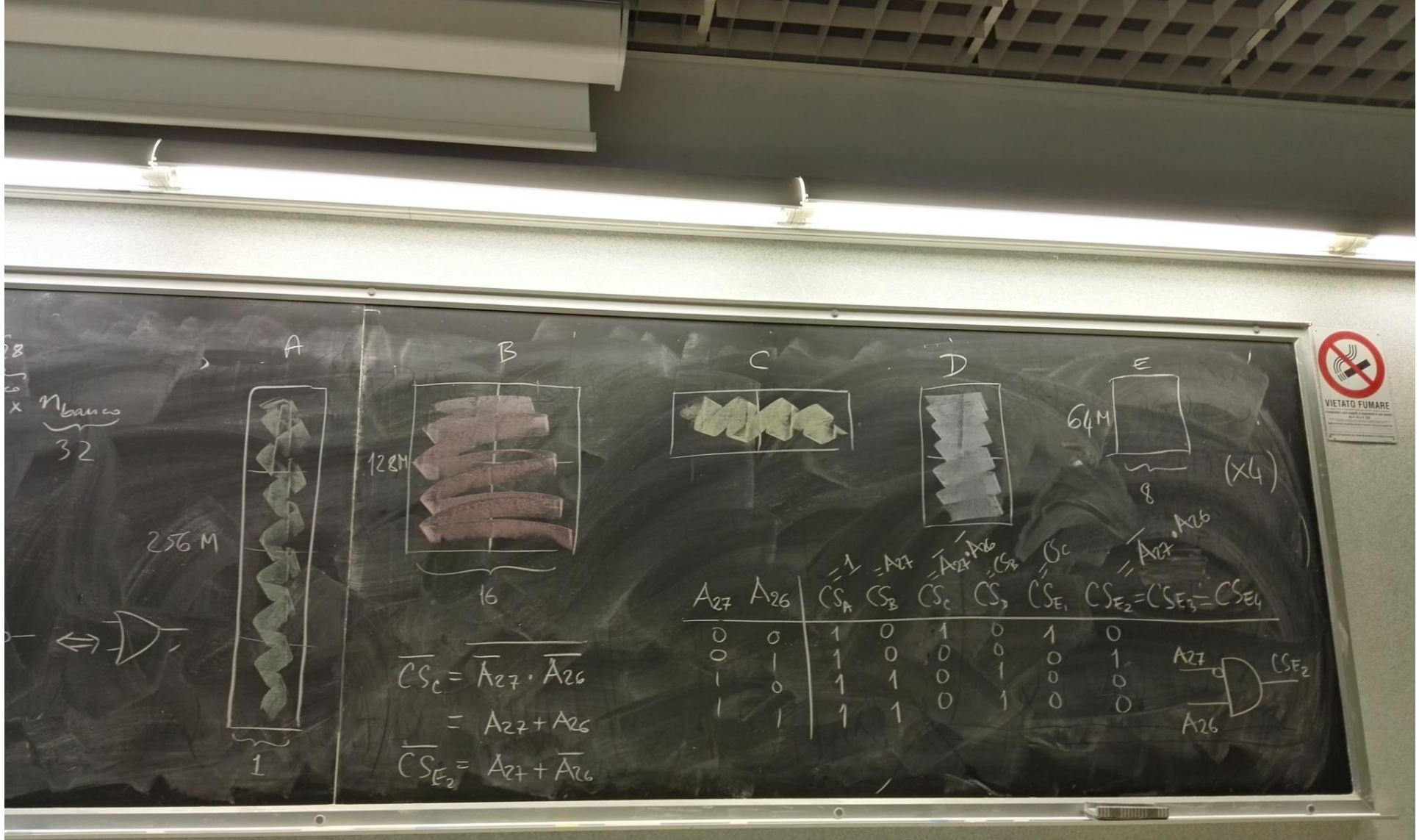
256M (words)

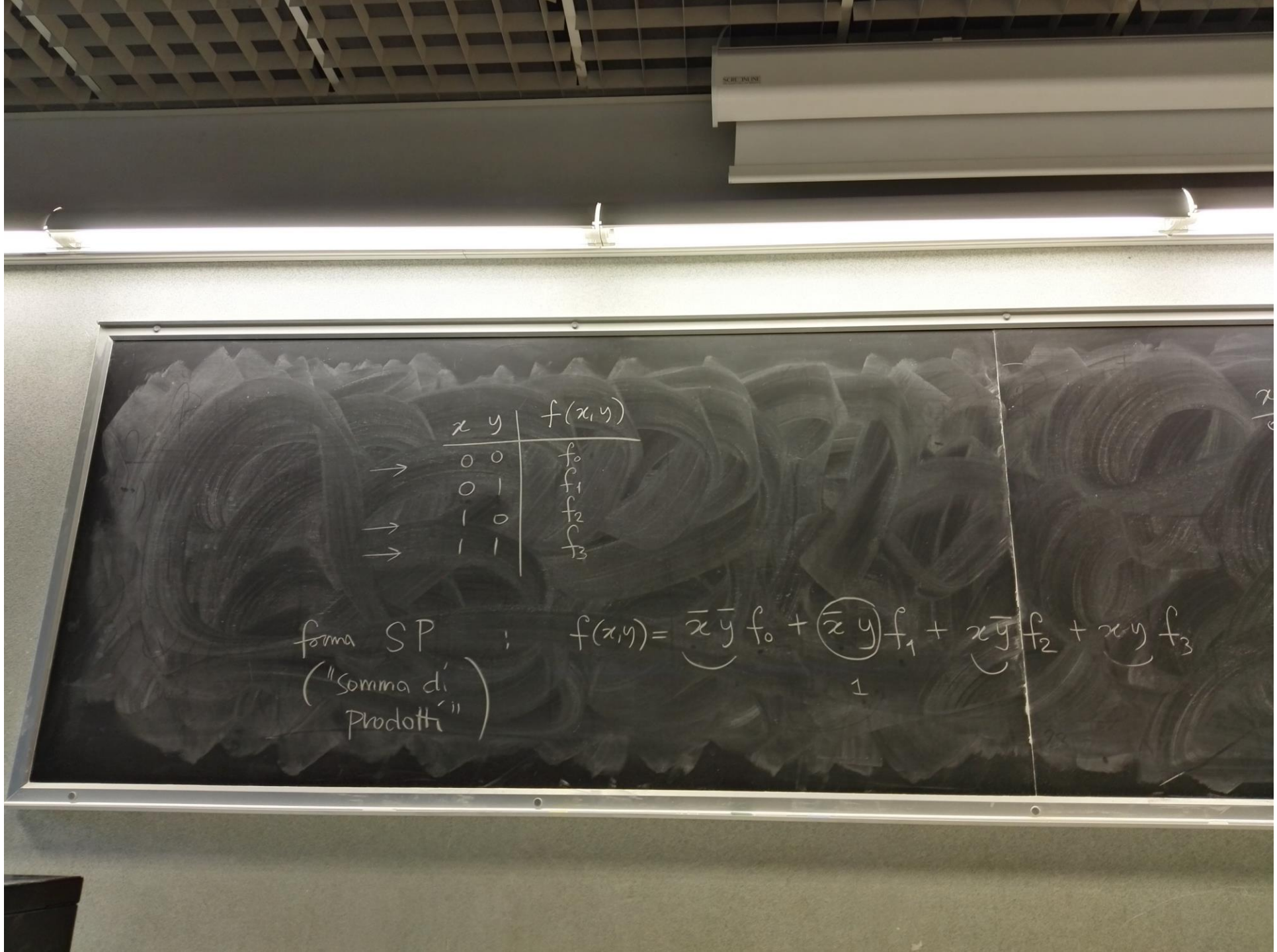
28 bit di indir

$(A_{27}, A_{26}, \ldots A_2, A_1, A$

28


E1
E2
E3
E4
256M
(words)
28 bit
di indir...
(A27, A26, ... A2, A1, A0)
28
32 bit
4 byte
S banco = 2 28 m banco x n banco
1GB
32
A
256M
128M
1


A
B
C
D
E
256 M
128M
64M
16
8
1
(x4)
n_{banco}
32
$\overline{CS_C} = \overline{\overline{A_{27}} \cdot \overline{A_{26}}}$
$= A_{27} + A_{26}$
$\overline{CS_{E_2}} = A_{27} + \overline{A_{26}}$
$= 1$
$= A_{27}$
$= \overline{A_{27}} \cdot A_{26}$
$= CS_B$
$= CS_C$
$= \overline{A_{27}} \cdot A_{26}$
A_{27} A_{26} | CS_A CS_B CS_C CS_D CS_{E_1} $CS_{E_2}=CS_{E_3}=CS_{E_4}$
0 0 | 1 0 1 0 1 0
0 1 | 1 0 0 0 0 1
1 0 | 1 1 0 0 0 0
1 1 | 1 1 0 1 0 0
A_{27}
A_{26}
CS_{E_2}
VIETATO FUMARE


x y | f(x,y)
0 0 | f0
0 1 | f1
1 0 | f2
1 1 | f3
forma SP ("somma di prodotti")
f(x,y) = x̄ ȳ f0 + x̄ y f1 + x ȳ f2 + x y f3
1

x y	f(x,y) = x
0 0	0
0 1	0
1 0	1
1 1	1

$f(x,y) = \cancel{\bar{x}\bar{y}\cdot 0} + \cancel{\bar{x}y\cdot 0} + x\bar{y}(1) + xy(1)$

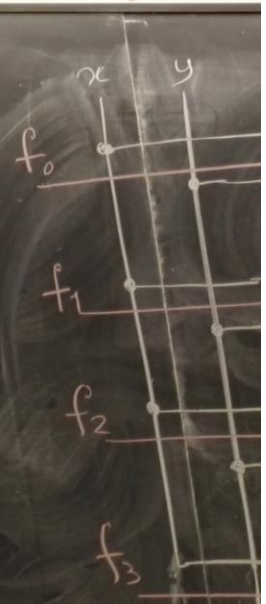
$= x\bar{y} + xy$ (SP)

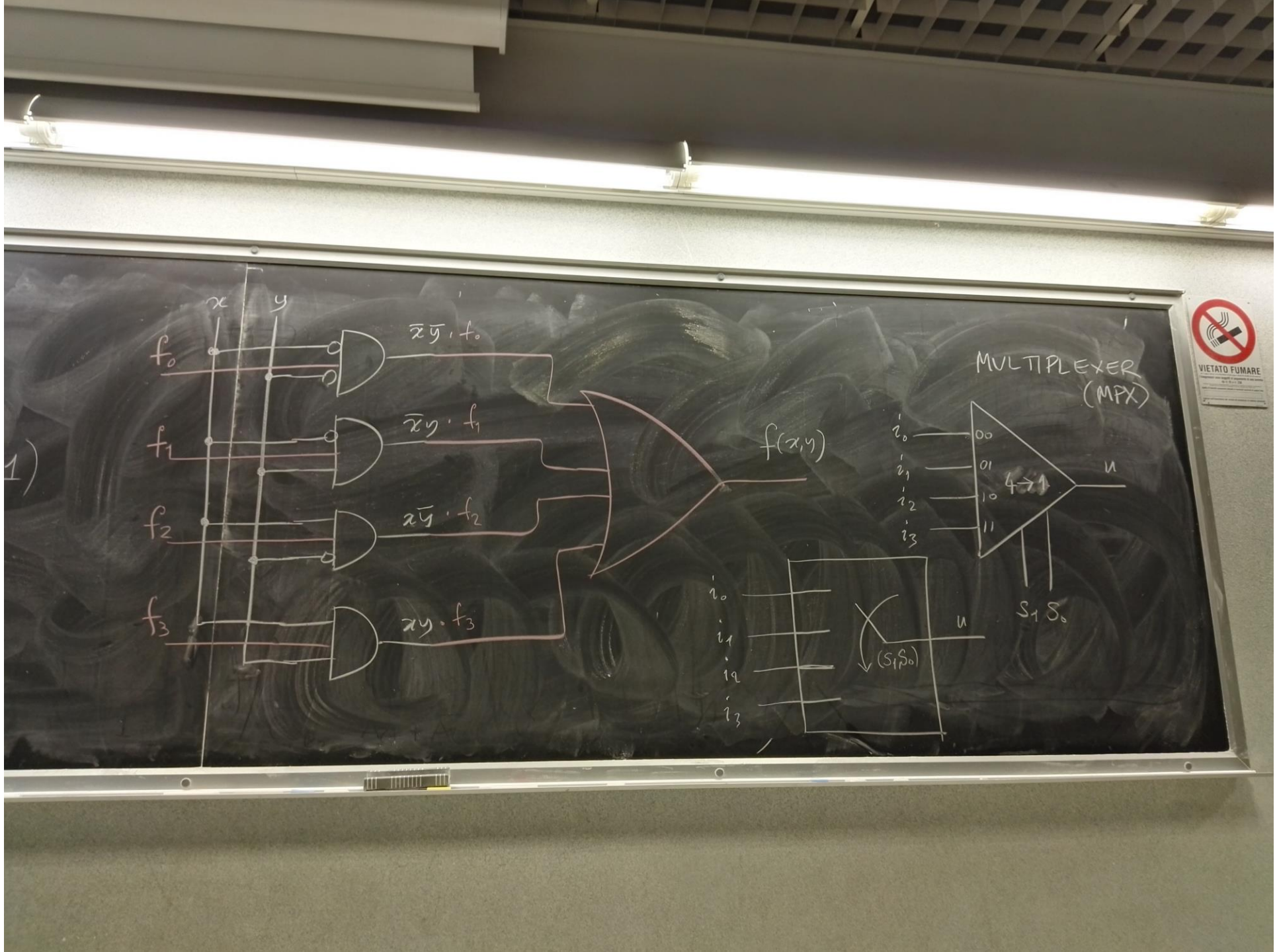
$f(x,y) = x$

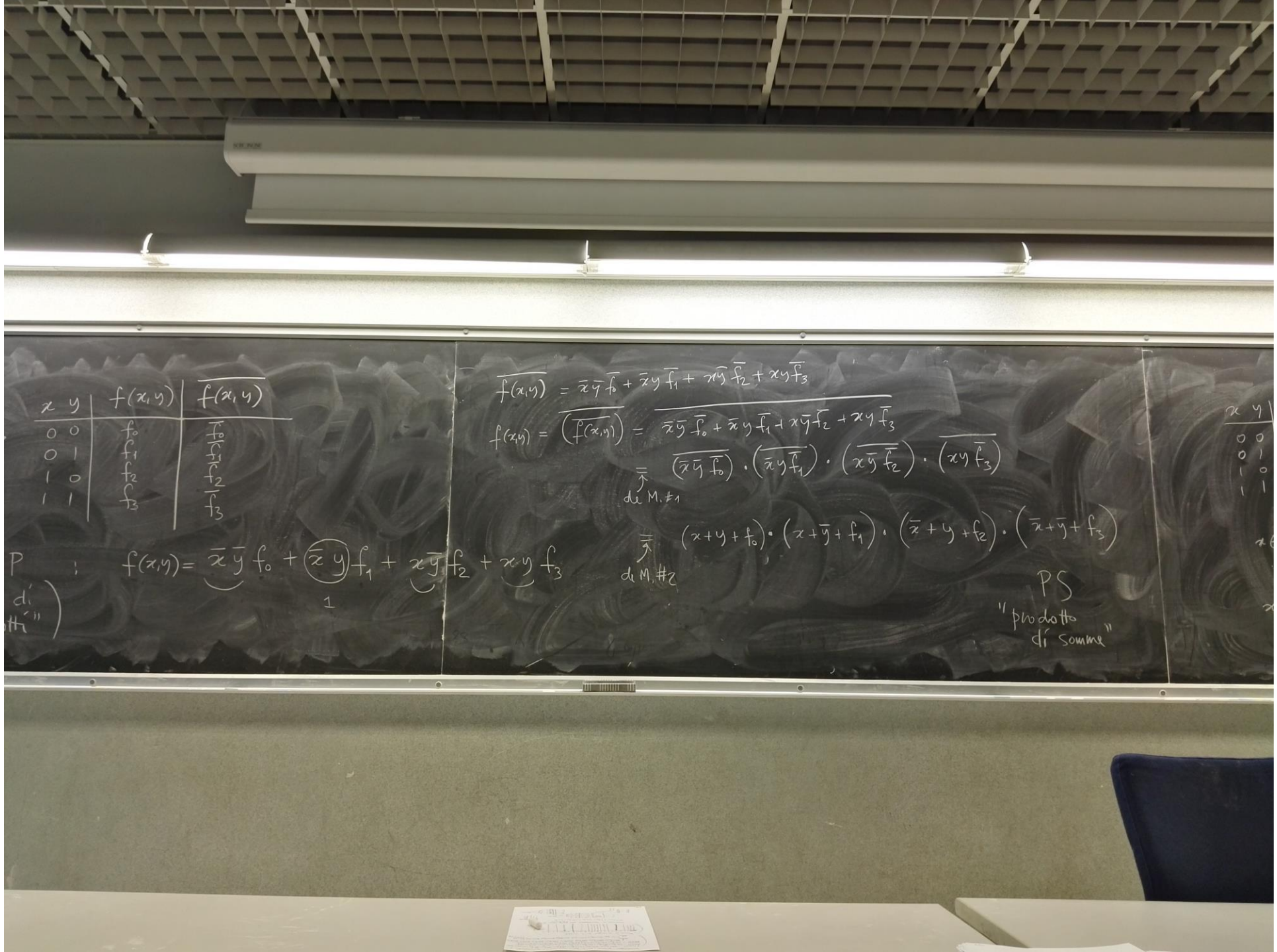
$= x\cdot(y+\bar{y}) =$

$= xy + x\bar{y}$ (≠ SP)

$f_1 + x\bar{y} f_2 + xy f_3$




x
y
f_0
f_1
f_2
f_3
$\bar{x}\bar{y} \cdot f_0$
$\bar{x}y \cdot f_1$
$x\bar{y} \cdot f_2$
$xy \cdot f_3$
f(x,y)
MULTIPLEXER
(MPX)
00
01
10
11
4→1
u
S_1 S_0
$(S_1 S_0)$
VIETATO FUMARE


x y | f(x,y) | $\overline{f(x,y)}$
0 0 | f_0 | $\overline{f_0}$
0 1 | f_1 | $\overline{f_1}$
1 0 | f_2 | $\overline{f_2}$
1 1 | f_3 | $\overline{f_3}$
$f(x,y) = \bar{x}\bar{y} f_0 + \bar{x} y f_1 + x\bar{y} f_2 + x y f_3$
1
$\overline{f(x,y)} = \bar{x}\bar{y}\overline{f_0} + \bar{x} y \overline{f_1} + x\bar{y}\overline{f_2} + x y \overline{f_3}$
$f(x,y) = \overline{\overline{f(x,y)}} = \overline{\bar{x}\bar{y}\overline{f_0} + \bar{x} y \overline{f_1} + x\bar{y}\overline{f_2} + x y \overline{f_3}}$
$= \overline{(\bar{x}\bar{y}\overline{f_0})} \cdot \overline{(\bar{x} y \overline{f_1})} \cdot \overline{(x\bar{y}\overline{f_2})} \cdot \overline{(x y \overline{f_3})}$
di M. #1
$= (x+y+f_0) \cdot (x+\bar{y}+f_1) \cdot (\bar{x}+y+f_2) \cdot (\bar{x}+\bar{y}+f_3)$
di M. #2
PS
"prodotto di somme"

$\cdot \overline{(xy\bar{f}_3)}$

$+y+f_2) \cdot (\bar{x}+\bar{y}+f_3)$

PS

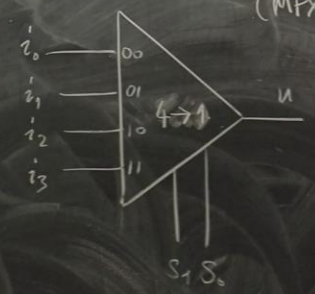
"prodotto di somme"

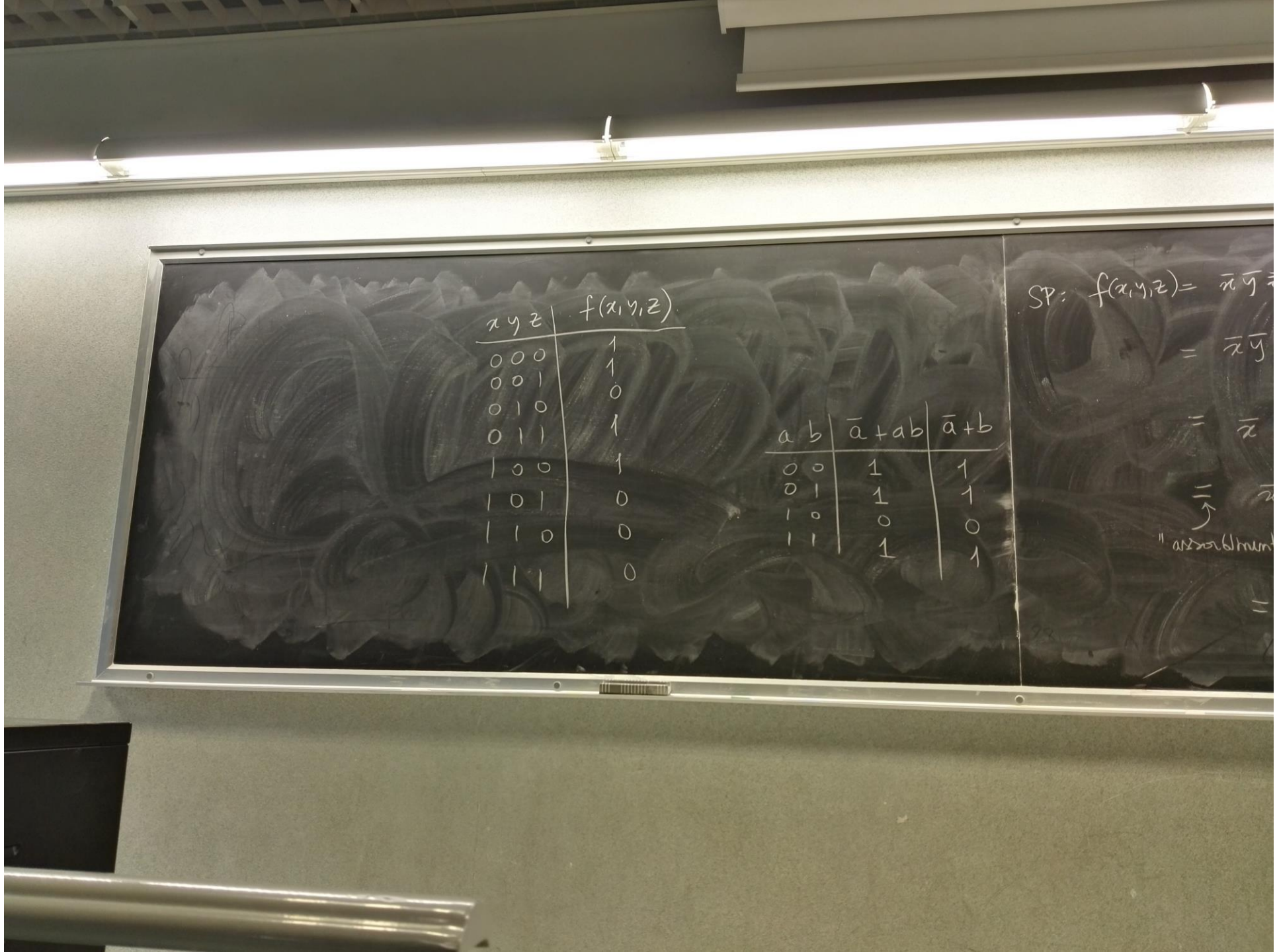
x	y	$x \oplus y$	
0	0	0	← PS
0	1	1	← SP
1	0	1	← SP
1	1	0	← PS

$x \oplus y \Big|_{SP} = \bar{x}y + x\bar{y}$

$x \oplus y \Big|_{PS} = (x+y) \cdot (\bar{x}+\bar{y})$

MULTIPLEXER (MPX)





x y z	f(x,y,z)
0 0 0	1
0 0 1	1
0 1 0	0
0 1 1	1
1 0 0	1
1 0 1	0
1 1 0	0
1 1 1	0

a b	$\bar{a}+ab$	$\bar{a}+b$
0 0	1	1
0 1	1	1
1 0	0	0
1 1	1	1

SP: $f(x,y,z) = \bar{x}\bar{y}$

$= \bar{x}\bar{y}$

$= \bar{x}$

$=$

$f(x,y,z)$

1
1
0
1
1
0
0
0

a	b	$\bar{a}+ab$	$\bar{a}+b$
0	0	1	1
0	1	1	1
1	0	0	0
1	1	1	1

SP: $f(x,y,z) = \bar{x}\bar{y}\bar{z} + \bar{x}\bar{y}z + \bar{x}yz + x\bar{y}\bar{z}$

$= \bar{x}\bar{y}\underbrace{(\bar{z}+z)}_{1} + \bar{x}yz + x\bar{y}\bar{z}$

$= \bar{x}(\bar{y}+yz) + x\bar{y}\bar{z}$

$= \bar{x}(\bar{y}+z) + x\bar{y}\bar{z} = \bar{x}\bar{y} + \bar{x}z + x\bar{y}\bar{z}$

↑ "assorbimento"

$= \underbrace{(\bar{x}+x\bar{z})}_{\text{ass.}}\bar{y} + \bar{x}z = \underbrace{(\bar{x}\bar{y}+)}\bar{y}\bar{z} + \bar{x}z$

$+ x\bar{y}\bar{z}$

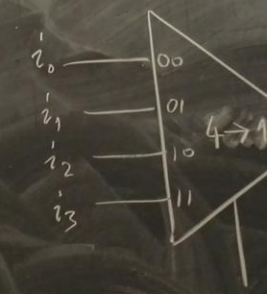
$+ x\bar{y}\bar{z}$

$= \bar{x}\bar{y} + \bar{x}\bar{z} + x\bar{y}\bar{z}$

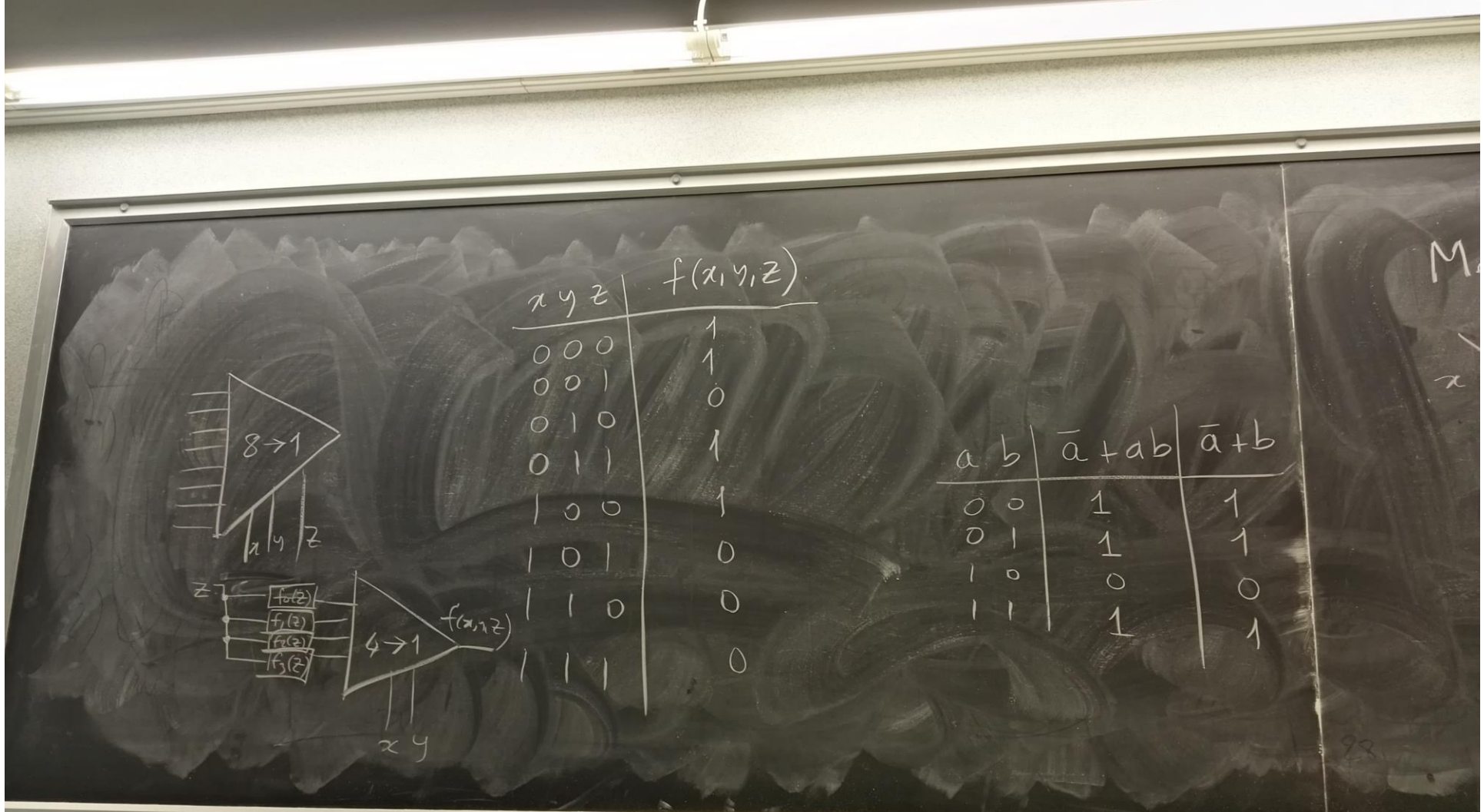
$= (\bar{x}\bar{y} +)\bar{y}\bar{z} + \bar{x}\bar{z}$

$x\,y\,z$	$\bar{x}\bar{z}$	$\bar{y}\bar{z}$	$\bar{x}\bar{y}$	$\bar{x}\bar{z} + \bar{y}\bar{z} \equiv f(x,y,z)$
0 0 0	0	1	1	1
0 0 1	1	0	1	1
0 1 0	0	0	0	0
0 1 1	1	0	0	1
1 0 0	0	1	0	1
1 0 1	0	0	0	0
1 1 0	0	0	0	0
1 1 1	0	0	0	0

MULTI



"Cella
fl



x y z	f(x,y,z)
0 0 0	1
0 0 1	1
0 1 0	0
0 1 1	1
1 0 0	1
1 0 1	0
1 1 0	0
1 1 1	0

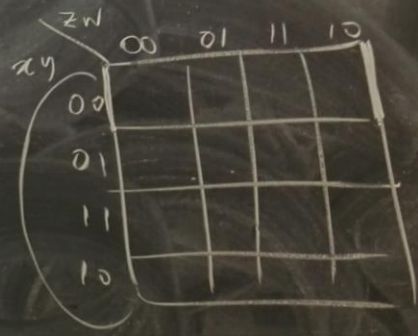
a b	$\bar{a}+ab$	$\bar{a}+b$
0 0	1	1
0 1	1	1
1 0	0	0
1 1	1	1

$\bar{a}+b$
1
1
0
1

Mappe di Karnaugh

"cod. Gray"

x \ yz	00	01	11	10
0	1	1	1	0
1	1	0	0	0



$$f(x,y,z) = \bar{y}\bar{z} + \bar{x}z + \bar{x}\bar{y}$$