PROVA - INTRODUÇÃO A SISTEMAS DIGITAIS

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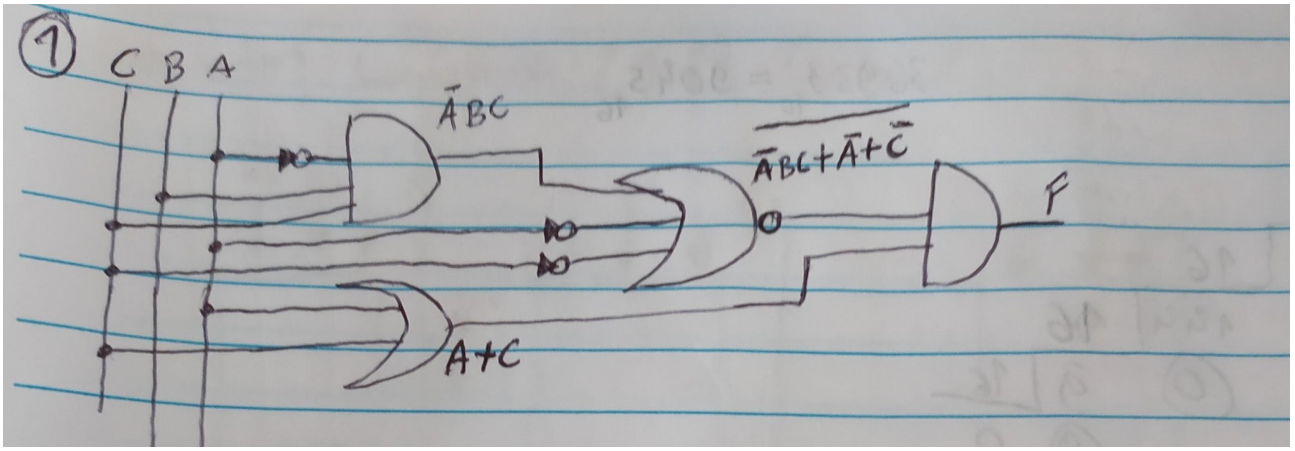
1)



$$F = \overline{(\bar{A}BC + \bar{A} + \bar{C})} \cdot (A+C)$$

Absorção

$$(\bar{A} + \bar{C}) \cdot (A+C)$$

Demorgan

$$(\bar{A} \cdot \bar{\bar{C}}) \cdot (A+C)$$

Involução

$$(A \cdot C) \cdot (A+C)$$

Distributividade

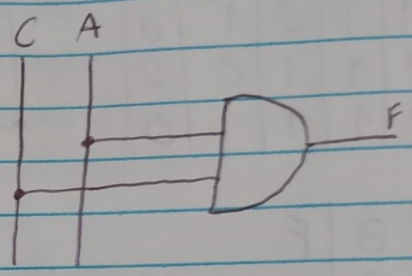
$$AAC + ACC$$

Idempotência

$$AC + AC$$

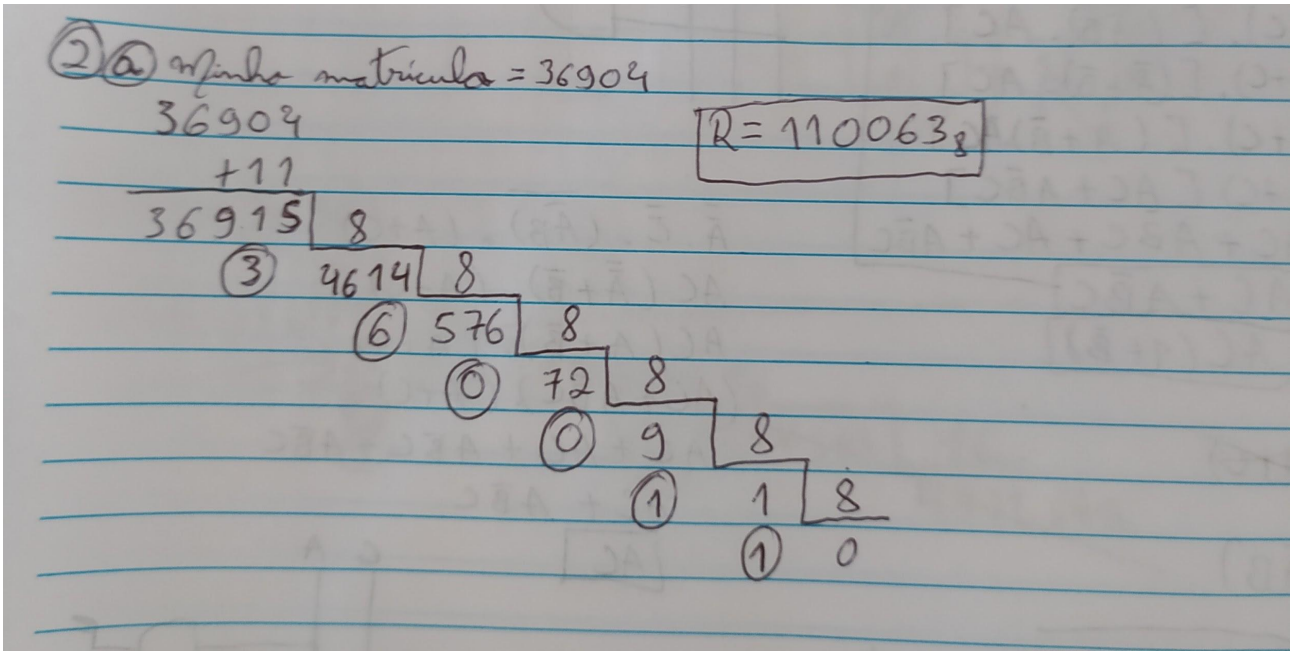
Idempotência

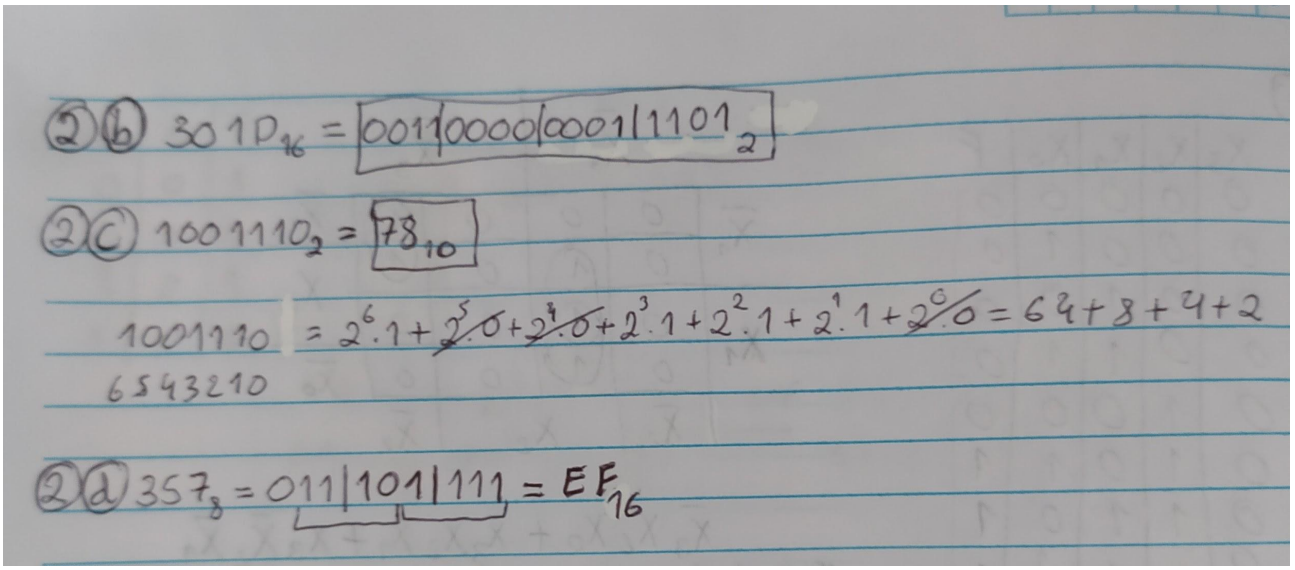
$$\boxed{F = AC}$$



Simplificação do Circuito

2)

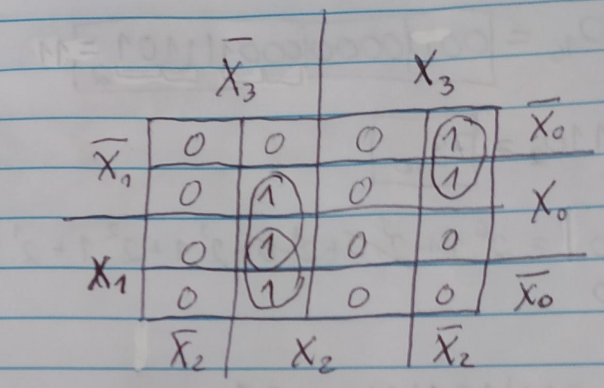

2 a minha matrícula = 36904
36904
+11
36915
8
3 4614 8
6 576 8
0 72 8
0 9 8
1 1 8
1 0
R = 110063₈


2 b 301D₁₆ = 0011|0000|0001|1101₂
2 c 1001110₂ = 78₁₀
1001110 = 2⁶·1 + 2⁵·0 + 2⁴·0 + 2³·1 + 2²·1 + 2¹·1 + 2⁰·0 = 64+8+4+2
6543210
2 d 357₈ = 011|101|111 = EF₁₆

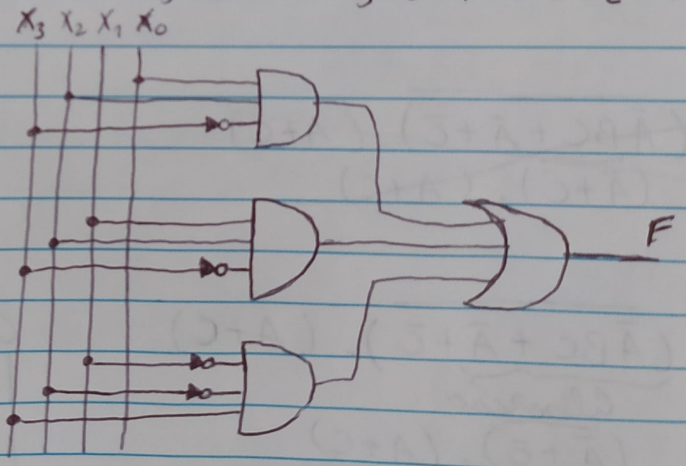
4)

④

X_3	X_2	X_1	X_0	F
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0



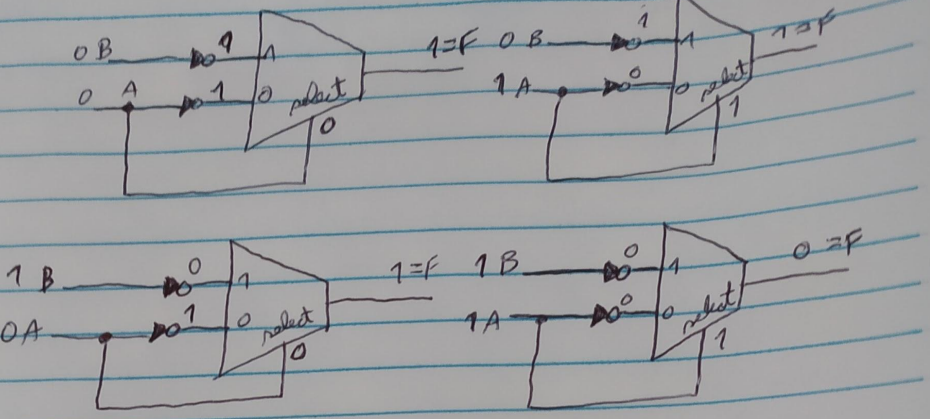
$\bar{X}_3 X_2 X_0 + \bar{X}_3 X_2 X_1 + X_3 \bar{X}_2 \bar{X}_1$



5)

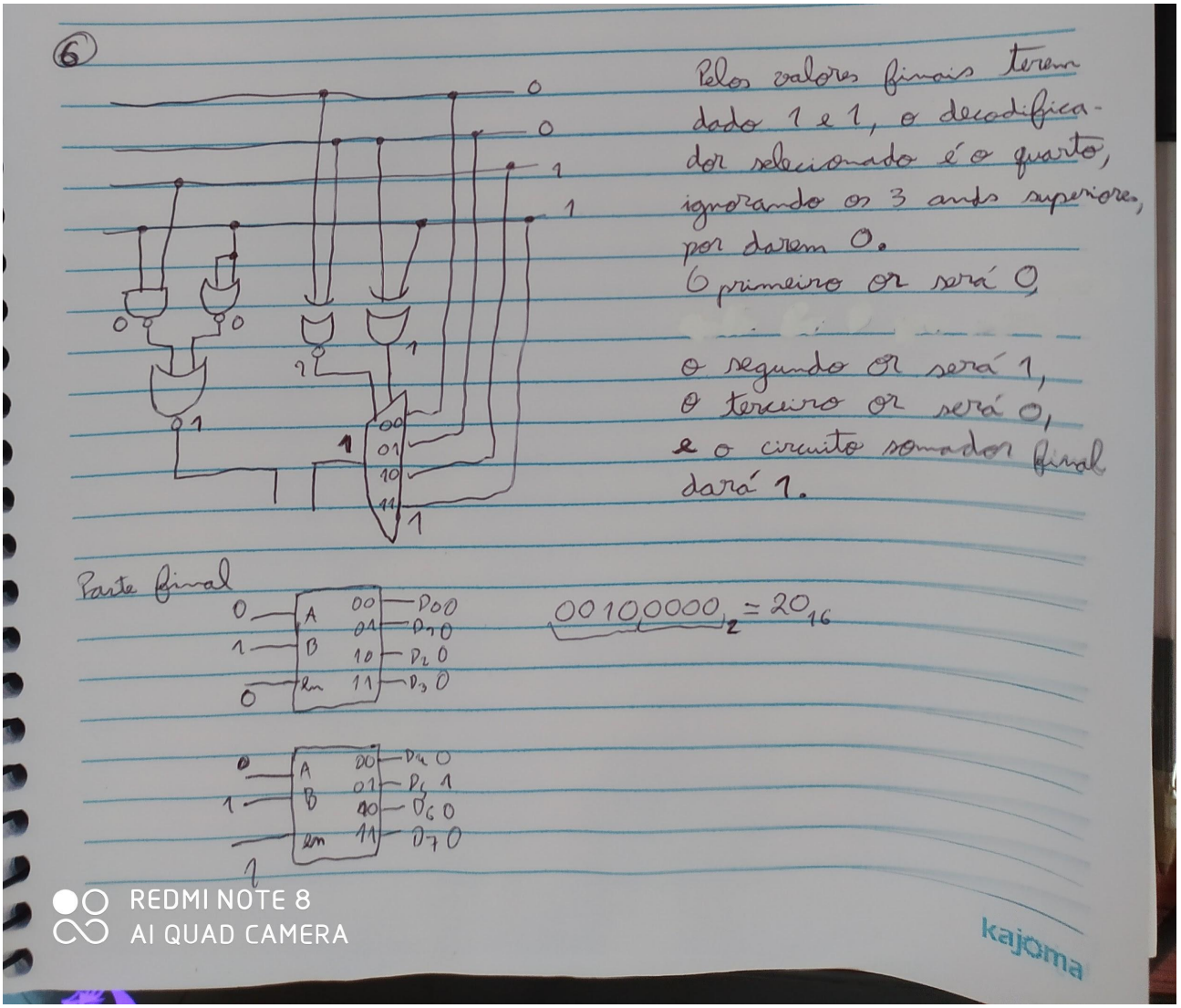
⑤

A	B	F
0	0	1
0	1	1
1	0	1
1	1	0



O circuito equivale a porta lógica NAND

6)


⑥
0
0
1
1
00
01
10
11
Pelos valores finais terem dado 1 e 1, o decodificador selecionado é o quarto, ignorando os 3 ands superiores, por darem 0.
O primeiro or será 0,
o segundo or será 1,
o terceiro or será 0,
e o circuito somador final dará 1.
Parte final
A
B
En
D_{00}
D_{10}
D_{20}
D_{30}
$00100000_2 = 20_{16}$
D_{40}
D_{51}
D_{60}
D_{70}
REDMI NOTE 8
AI QUAD CAMERA
kajoma