

3B

a) Tabela de verdade $F(A, B, C, D)$

A	B	C	D	Σ_{AB}	Σ_{CD}	F
0	0	0	0	0	0	0
0	0	0	1	0	1	X
0	0	1	0	0	1	X
0	0	1	1	0	2	X
0	1	0	0	1	0	1
0	1	0	1	1	1	0
0	1	1	0	1	1	0
0	1	1	1	1	2	X
1	0	0	0	1	0	1
1	0	0	1	1	1	0
1	0	1	0	1	1	0
1	0	1	1	1	2	X
1	1	0	0	2	0	1
1	1	0	1	2	1	1
1	1	1	0	2	1	1
1	1	1	1	2	2	0

b) Mapa de Karnaugh

F:	$\bar{C}\bar{D}$	$\bar{C}D$	CD	$C\bar{D}$
$\bar{A}\bar{B}$		X	X	X
$\bar{A}B$	1		X	
AB	1	1		1
$A\bar{B}$	1		X	

$$F = AB\bar{C} + AB\bar{D} + B\bar{C}\bar{D} + A\bar{C}\bar{D}$$

c) Circuito simplificado

