

Devoir 1

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(a) Table de vérité

	A	B	C	D	V
0	0	0	0	0	0
1	0	0	0	1	0
2	0	0	1	0	0
3	0	0	1	1	0
4	0	1	0	0	0
5	0	1	0	1	0
6	0	1	1	0	1
7	0	1	1	1	1
8	1	0	0	0	0
9	1	0	0	1	1
10	1	0	1	0	1
11	1	0	1	1	1
12	1	1	0	0	1
13	1	1	0	1	1
14	1	1	1	0	1
15	1	1	1	1	1

(b) SOP de la fonction V

# de 1	Minterm	Binaire	Taille 2		Taille 4	
1	—	—	—		—	
2	m6 m10 m12	0110 1010 1100	m(6,7) m(10,11) m(12,13)	011- 101- 110-	m(10,11,14,15) m(6,7,14,15) m(12,13,14,15)	1-1- * -11- * 11- *
3	m7 m11 m13 m14	0111 1011 1101 1110	m(14,15)	111-	—	
4	m15	1111	—		—	

Table 1: Table de minterms

Implicant	m6	m7	m10	m11	m12	m13	m14	m15
m(10,11,14,15)			✓	✓			✓	✓
m(10,11,14,15)	✓	✓					✓	✓
m(10,11,14,15)					✓	✓	✓	✓

Table 2: Prime Implicants

$$V(A, B, C, D) = AC + BC + AB$$