

Exercícios de mapa de Karnaugh

Exercícios elaborados a partir do site: www.profeletro.info

1)

Tabela da Verdade

A	B	C	F(ABC)
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

Mapa de Karnaugh

		AB			
		00	01	11	10
C	0	1	1	1	0
	1	0	0	1	1

$$F(ABC) = \bar{A} \bar{C} + A C + A B$$

2)

Tabela da Verdade

A	B	C	D	F(ABCD)
0	0	0	0	1
0	0	0	1	1
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	1
1	1	1	1	0

Mapa de Karnaugh

		AB			
		00	01	11	10
CD	00	1	0	0	1
	01	1	1	0	0
	11	1	1	0	0
	10	0	0	1	0

$$F(ABCD) = \bar{A} D + \bar{B} \bar{C} \bar{D} + A B C \bar{D}$$

3)

Tabela da Verdade

A	B	C	F(ABC)
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	0

Mapa de Karnaugh

		AB			
		00	01	11	10
C	0	1	1	1	0
	1	0	0	0	0

$$F(ABC) = \bar{A} \bar{C} + B \bar{C}$$

4)

Tabela da Verdade

A	B	C	F(ABC)
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

Mapa de Karnaugh

		AB			
		00	01	11	10
C	0	1	0	0	1
	1	0	1	1	0

$$F(ABC) = B C + \bar{B} \bar{C}$$

5)

Tabela da Verdade

A	B	C	D	F(ABCD)
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
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	1
1	1	1	1	1

Mapa de Karnaugh

		AB			
		00	01	11	10
CD	00	0	0	0	0
	01	1	0	0	1
	11	0	1	1	0
	10	0	1	1	0

$$F(ABCD) = B C + \bar{B} \bar{C} D$$

6)

Tabela da Verdade

A	B	C	D	F(ABCD)
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	0
0	1	1	1	0
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
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

Mapa de Karnaugh

		AB			
		00	01	11	10
CD	00	1	1	0	1
	01	0	1	0	0
	11	0	0	0	0
	10	1	0	0	1

$$F(ABCD) = \bar{B} \bar{D} + \bar{A} B \bar{C}$$

7)

Tabela da Verdade

A	B	C	D	F(ABCD)
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
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

Mapa de Karnaugh

		AB			
		00	01	11	10
CD	00	1	0	0	0
	01	1	0	0	1
	11	1	0	0	0
	10	1	0	0	0

$$F(ABCD) = \bar{A} \bar{B} + \bar{B} \bar{C} D$$

8)

Tabela da Verdade

A	B	C	D	F(ABCD)
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
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	0
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	0
1	1	1	1	1

Mapa de Karnaugh

		AB			
		00	01	11	10
CD	00	0	0	0	0
	01	0	1	1	0
	11	0	1	1	0
	10	1	1	0	1

$$F(ABCD) = B D + \bar{B} C \bar{D} + \bar{A} C \bar{D}$$