

|           |                             |  |  |  |  |
|-----------|-----------------------------|--|--|--|--|
| Guia 0603 |                             |  |  |  |  |
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| Matricula | 699415                      |  |  |  |  |

a)  $f(a,b,c,d) = \sum m(1, 2, 5, 8, 10, 12)$

| #  | a | b | c | d | s |
|----|---|---|---|---|---|
| 0  | 0 | 0 | 0 | 0 | 0 |
| 1  | 0 | 0 | 0 | 1 | 1 |
| 2  | 0 | 0 | 1 | 0 | 1 |
| 3  | 0 | 0 | 1 | 1 | 0 |
| 4  | 0 | 1 | 0 | 0 | 0 |
| 5  | 0 | 1 | 0 | 1 | 1 |
| 6  | 0 | 1 | 1 | 0 | 0 |
| 7  | 0 | 1 | 1 | 1 | 0 |
| 8  | 1 | 0 | 0 | 0 | 1 |
| 9  | 1 | 0 | 0 | 1 | 0 |
| 10 | 1 | 0 | 1 | 0 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 |
| 12 | 1 | 1 | 0 | 0 | 1 |
| 13 | 1 | 1 | 0 | 1 | 0 |
| 14 | 1 | 1 | 1 | 0 | 0 |
| 15 | 1 | 1 | 1 | 1 | 0 |

| Mapa Veitch-Karnaugh |                     |                        |    |    |
|----------------------|---------------------|------------------------|----|----|
| ab/cd                | 00                  | 01                     | 11 | 10 |
| 00                   |                     | 1                      |    | 1  |
| 01                   |                     | 1                      |    |    |
| 11                   | 1                   |                        |    |    |
| 10                   | 1                   |                        |    | 1  |
| Conjuntos            | (1,5),(2,10),(12,8) |                        |    |    |
| Fun. Simplificada    | SoP:                | $a'c'd + b'cd' + ac'd$ |    |    |

b)  $f(a,b,c,d) = \sum m(0, 1, 3, 5, 7, 9, 13)$

| #  | a | b | c | d | s |
|----|---|---|---|---|---|
| 0  | 0 | 0 | 0 | 0 | 1 |
| 1  | 0 | 0 | 0 | 1 | 1 |
| 2  | 0 | 0 | 1 | 0 | 0 |
| 3  | 0 | 0 | 1 | 1 | 1 |
| 4  | 0 | 1 | 0 | 0 | 0 |
| 5  | 0 | 1 | 0 | 1 | 1 |
| 6  | 0 | 1 | 1 | 0 | 0 |
| 7  | 0 | 1 | 1 | 1 | 1 |
| 8  | 1 | 0 | 0 | 0 | 0 |
| 9  | 1 | 0 | 0 | 1 | 1 |
| 10 | 1 | 0 | 1 | 0 | 0 |
| 11 | 1 | 0 | 1 | 1 | 0 |
| 12 | 1 | 1 | 0 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 0 |
| 15 | 1 | 1 | 1 | 1 | 0 |

| Mapa Veitch-Karnaugh |      |     |    |     |
|----------------------|------|-----|----|-----|
| ab/cd                | C'D' | C'D | CD | CD' |
| A'B'                 | 0    | 1   | 3  | 2   |
| A'B                  | 4    | 5   | 7  | 6   |
| AB                   | 12   | 13  | 15 | 14  |
| AB'                  | 8    | 9   | 11 | 10  |

| ab/cd             | 00                         | 01                   | 11 | 10 |
|-------------------|----------------------------|----------------------|----|----|
| 00                | 1                          | 1                    | 1  | 0  |
| 01                | 0                          | 1                    | 1  | 0  |
| 11                | 0                          | 1                    | 0  | 0  |
| 10                | 0                          | 1                    | 0  | 0  |
| Conjuntos         | (0,1),(1,3,5,7),(1,5,9,13) |                      |    |    |
| Fun. Simplificada | SoP:                       | $a'b'c' + a'd + c'd$ |    |    |

c)  $f(a,b,c,d) = \sum m(0, 1, 2, 6, 7, 8, 14, 15)$

| #  | a | b | c | d | s |
|----|---|---|---|---|---|
| 0  | 0 | 0 | 0 | 0 | 1 |
| 1  | 0 | 0 | 0 | 1 | 1 |
| 2  | 0 | 0 | 1 | 0 | 1 |
| 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 | 1 |
| 9  | 1 | 0 | 0 | 1 | 0 |
| 10 | 1 | 0 | 1 | 0 | 0 |
| 11 | 1 | 0 | 1 | 1 | 0 |
| 12 | 1 | 1 | 0 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 0 |
| 14 | 1 | 1 | 1 | 0 | 1 |
| 15 | 1 | 1 | 1 | 1 | 1 |

| Mapa Veitch-Karnaugh |      |     |    |     |
|----------------------|------|-----|----|-----|
| ab/cd                | C'D' | C'D | CD | CD' |
| A'B'                 | 0    | 1   | 3  | 2   |
| A'B                  | 4    | 5   | 7  | 6   |
| AB                   | 12   | 13  | 15 | 14  |
| AB'                  | 8    | 9   | 11 | 10  |

| ab/cd             | 00                            | 01                              | 11 | 10 |
|-------------------|-------------------------------|---------------------------------|----|----|
| 00                | 1                             | 1                               | 0  | 1  |
| 01                | 0                             | 0                               | 1  | 1  |
| 11                | 0                             | 0                               | 1  | 1  |
| 10                | 1                             | 0                               | 0  | 0  |
| Conjuntos         | (7,6,14,15),(0,1),(0,2),(0,8) |                                 |    |    |
| Fun. Simplificada | SoP:                          | $bc + b'c'd' + a'b'c' + a'b'd'$ |    |    |

d)  $f(a,b,c,d) = \sum m(2, 4, 5, 7, 10, 13, 14)$

| #  | a | b | c | d | s |
|----|---|---|---|---|---|
| 0  | 0 | 0 | 0 | 0 | 0 |
| 1  | 0 | 0 | 0 | 1 | 0 |
| 2  | 0 | 0 | 1 | 0 | 1 |
| 3  | 0 | 0 | 1 | 1 | 0 |
| 4  | 0 | 1 | 0 | 0 | 1 |
| 5  | 0 | 1 | 0 | 1 | 1 |
| 6  | 0 | 1 | 1 | 0 | 0 |
| 7  | 0 | 1 | 1 | 1 | 1 |
| 8  | 1 | 0 | 0 | 0 | 0 |
| 9  | 1 | 0 | 0 | 1 | 0 |
| 10 | 1 | 0 | 1 | 0 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 |
| 12 | 1 | 1 | 0 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 1 |
| 15 | 1 | 1 | 1 | 1 | 0 |

| Mapa Veitch-Karnaugh |      |     |    |     |
|----------------------|------|-----|----|-----|
| ab/cd                | C'D' | C'D | CD | CD' |
| A'B'                 | 0    | 1   | 3  | 2   |
| A'B                  | 4    | 5   | 7  | 6   |
| AB                   | 12   | 13  | 15 | 14  |
| AB'                  | 8    | 9   | 11 | 10  |

| ab/cd             | 00                                | 01                                   | 11 | 10 |
|-------------------|-----------------------------------|--------------------------------------|----|----|
| 00                | 0                                 | 0                                    | 0  | 1  |
| 01                | 1                                 | 1                                    | 1  | 0  |
| 11                | 0                                 | 1                                    | 0  | 1  |
| 10                | 0                                 | 0                                    | 0  | 1  |
| Conjuntos         | (5,4),(5,7),(5,13),(10,2),(10,14) |                                      |    |    |
| Fun. Simplificada | SoP:                              | $a'bc' + a'bd + bc'd + b'cd' + acd'$ |    |    |

e)  $f(a,b,c,d) = \sum m(0, 1, 3, 7, 8, 9, 11, 15)$

| #  | a | b | c | d | s |
|----|---|---|---|---|---|
| 0  | 0 | 0 | 0 | 0 | 1 |
| 1  | 0 | 0 | 0 | 1 | 1 |
| 2  | 0 | 0 | 1 | 0 | 0 |
| 3  | 0 | 0 | 1 | 1 | 1 |
| 4  | 0 | 1 | 0 | 0 | 0 |
| 5  | 0 | 1 | 0 | 1 | 0 |
| 6  | 0 | 1 | 1 | 0 | 0 |
| 7  | 0 | 1 | 1 | 1 | 1 |
| 8  | 1 | 0 | 0 | 0 | 1 |
| 9  | 1 | 0 | 0 | 1 | 1 |
| 10 | 1 | 0 | 1 | 0 | 0 |
| 11 | 1 | 0 | 1 | 1 | 1 |
| 12 | 1 | 1 | 0 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 0 |
| 14 | 1 | 1 | 1 | 0 | 0 |
| 15 | 1 | 1 | 1 | 1 | 1 |

| Mapa Veitch-Karnaugh |      |     |    |     |
|----------------------|------|-----|----|-----|
| ab/cd                | C'D' | C'D | CD | CD' |
| A'B'                 | 0    | 1   | 3  | 2   |
| A'B                  | 4    | 5   | 7  | 6   |
| AB                   | 12   | 13  | 15 | 14  |
| AB'                  | 8    | 9   | 11 | 10  |

| ab/cd             | 00                    | 01          | 11 | 10 |
|-------------------|-----------------------|-------------|----|----|
| 00                | 1                     | 1           | 1  | 0  |
| 01                | 0                     | 0           | 1  | 0  |
| 11                | 0                     | 0           | 1  | 0  |
| 10                | 1                     | 1           | 1  | 0  |
| Conjuntos         | (0,1,8,9),(3,7,15,11) |             |    |    |
| Fun. Simplificada | SoP:                  | $b'c' + cd$ |    |    |