**Πίνακας Αλήθειας**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ABCD | DISPLAY | Fa | Fb | Fc | Fd | Fe | Ff | Fg |
| 0000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0001 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 0010 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 0011 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| 0100 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 0101 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 0110 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 0111 | 7 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| 1000 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1001 | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1010 | A | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1011 | b | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1100 | C | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 1101 | d | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 1110 | E | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 1111 | F | 0 | 1 | 1 | 1 | 0 | 0 | 0 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 1 | 0 | 0 |
| 01 | 1 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 |
| 10 | 0 | 0 | 1 | 0 |

**Πίνακες KARNAUGHT**

Fa ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 1 | 0 | 1 |
| 11 | 1 | 0 | 1 | 1 |
| 10 | 0 | 0 | 1 | 0 |

Fb ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 0 | 0 | 1 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | 1 | 0 | 1 | 1 |
| 10 | 0 | 0 | 0 | 0 |

Fc ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 1 | 0 | 0 |
| 01 | 1 | 0 | 1 | 0 |
| 11 | 0 | 0 | 1 | 0 |
| 10 | 0 | 0 | 0 | 1 |

Fd ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 1 | 1 | 0 |
| 01 | 1 | 1 | 1 | 0 |
| 11 | 0 | 0 | 0 | 0 |
| 10 | 0 | 1 | 0 | 0 |

Fe ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 0 | 0 | 1 | 1 |
| 01 | 0 | 0 | 1 | 0 |
| 11 | 0 | 1 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 |

Ff ->

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AB\CD | 00 | 01 | 11 | 10 |
| 00 | 1 | 1 | 0 | 0 |
| 01 | 0 | 0 | 1 | 0 |
| 11 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 |

Fg ->

**Λογικές συναρτήσεις**

Fa = A’\*B’\*C’\*D + A’\*B\*C’\*D’ + A\*B’\*C\*D + A\*B\*C’\*D

Fb = B\*C\*D’ + A\*B\*C + A\*C\*D + A\*B\*D’ + A’\*B\*C’\*D

Fc = A\*B\*C + A\*B\*D’ + A’\*B’\*C\*D’

Fd = B\*C\*D + A’\*B’\*C’\*D + A’\*B\*C’\*D’ + A\*B’\*C\*D’

Fe = A’\*D + A’\*B\*C’ + B’\*C’\*D

Ff = A’\*B’\*C + A’\*C\*D + A\*B\*C’\*D

Fg = A’\*B’\*C’ + A’\*B\*C\*D + A\*B\*C’\*D’