**BLG231 Digital Circuits HW2**

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1. 𝑓(𝑎, 𝑏, 𝑐, 𝑑) = 𝑚(0,2,3,7,8,10,12,13)

𝑓(𝑎, 𝑏, 𝑐, 𝑑) + 𝑔(𝑎, 𝑏, 𝑐, 𝑑) = ∏𝑀(1,4,6,14)

𝑓(𝑎, 𝑏, 𝑐, 𝑑) ⋅ 𝑔(𝑎, 𝑏, 𝑐, 𝑑) = 𝑚(7,13)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| index | 𝑎 | 𝑏 | 𝑐 | 𝑑 | 𝑓 | 𝑓 + 𝑔 | 𝑓 ⋅ 𝑔 | 𝑔 |
| 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 3 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 |
| 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 9 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 10 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 11 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| 12 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 15 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |





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a