

Diagram illustrating a 4x4 Karnaugh map for the function S_0 . The map is labeled S_0 in the top-left corner. The horizontal axis is labeled AB with values 00, 01, 11, and 10. The vertical axis is labeled CD with values 00, 01, 11, and 10. The map shows the function values for each combination of AB and CD .

The function values are:

- Row $CD=00$: 0, 0, 0, 0
- Row $CD=01$: 1, 0, 0, 0
- Row $CD=11$: 0, 0, 0, 0
- Row $CD=10$: 1, 0, 0, 0

The two '1's are highlighted with green boxes, indicating the minterms $\overline{A}\overline{B}\overline{C}D$ and $\overline{A}\overline{B}C\overline{D}$. The map also includes labels for the variables A , B , C , and D with their respective ranges.

$$S_0 = \underline{\overline{A}\overline{B}\overline{C}D} + \underline{\overline{A}\overline{B}C\overline{D}}$$