PQRS

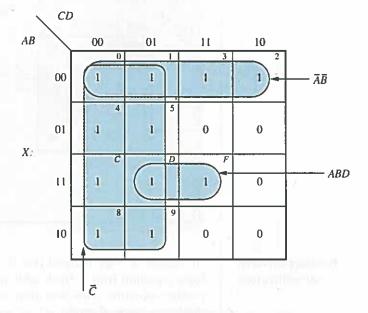
Figure 3–57

A four-variable truth table and its K-map.

0 0 0 1 1 0 Z: C E D В C D E 1 0 1 1 1 1 0 $Z = \Sigma_m 0, 2, 3, 5, 6, 7, 8, A, C, D, E$

that yield the term \overline{AB} . Finally, the smallest group is a group of two adjacent 1-cells. In Figure 3-58, cell no. D and cell no. F make up a group of two adjacent 1-cells that yield the term ABD. As stated earlier, 1-cells that are not adjacent to any other 1-cells must be taken singly, as minterms. There are no single 1-cells in Figure 3-58. The simplified logic equation for the K-map in Figure 3-58 can be obtained by taking the logical sum of the simplified terms (products) produced by each group of adjacent 1-cells:

$$X = \overline{C} + \overline{AB} + ABD$$



Equation (3-52)

Figure 3–58
Combining various groups of cells in a four-variable K-map.