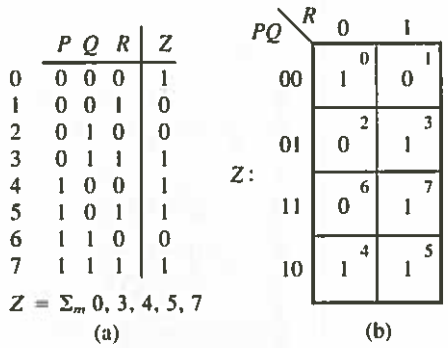
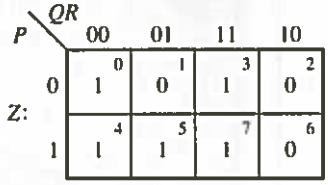
	P	Q	R	Z
0	0	0	0	1
1	0	0	1	0
2	0	1	0	0
3	0	1	1	1
4	1	0	0	1
5	1	0	1	1
6	1	1	0	0
7	1	1	1	1

$Z = \Sigma_m\, 0, 3, 4, 5, 7$

(a)



(b)



(c)

Figure 3–50
A three-variable truth table and its K-map.

The following examples illustrate other K-map configurations in which no simplification is possible.

K-maps that have cells containing 1's that are adjacent in groups of two will produce simplified logic equations. For example, in Figure 3–53 we have K-maps with five cells containing 1's. Notice that Figure 3–53a and b illustrate the *same* K-map, but we have simply grouped the adjacent 1-cells differently. In Figure 3–53a and b we have combined cells nos. 0 and 4, and cells nos. 3 and 7, into two groups. Cell no. 1 is adjacent to both cell no. 0 and cell no. 3, so we can combine it with cell no. 0 (as shown in Figure 3–53a) or with cell no. 3 (as shown in Figure 3–53b).

With reference to the group made up of cell no. 0 and cell no. 4, notice that the variables *B* and *C* remain constant (the variable *A*

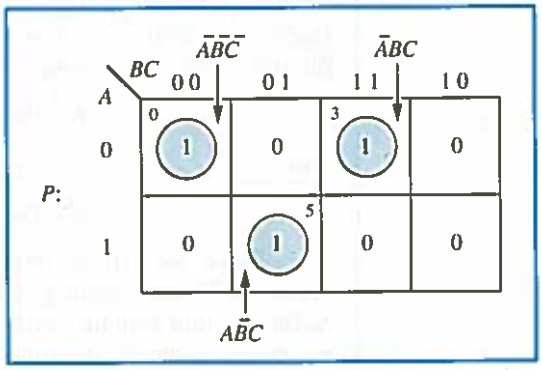


Figure 3–51
Nonadjacent 1-cells.