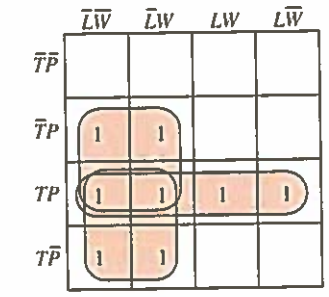
Team Discussion

By rereading conditions 2 and 4, can you logically explain why the weight is irrelevant and doesn't appear in the final equation?



Alarm = $TP + P\bar{L} + T\bar{L}$

(a)

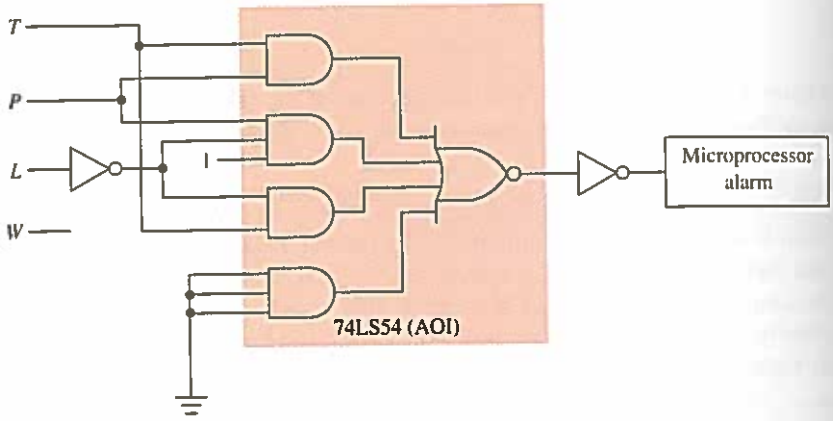


Figure 5–77 (a) Simplified equation derived from a Karnaugh map; (b) implementation of the chemical tank alarm using an AOI.

Review Questions

5–17. The number of cells in a Karnaugh map is equal to the number of entries in a corresponding truth table. True or false?

5–18. The order in which you label the rows and columns of a Karnaugh map does not matter as long as every combination of variables is used. True or false?

5–19. Adjacent cells in a Karnaugh map are encircled in groups of 2, 4, 6, or 8. True or false?

5–20. Which method of encircling eight adjacent cells in a Karnaugh map produces the simplest equation; two groups of four, or one group of eight?

5–9 CPLD Design Applications

Many of the theories and procedures developed in this chapter can be proven by simulating the logic in the CPLD design environment. In the examples that follow, we will use CPLD software to design original circuits and to prove the Boolean rules and laws that were presented earlier. To duplicate these examples yourself, you must first complete the tutorials in Appendix E.