
1.1 Convert the binary number 1010100 to decimal format.

Solution

The right-most digit is the multiplier of 2^0 , the next digit on its left is the multiplier of 2^1 , and so on. Thus,

$$\begin{aligned} 1010100 &= 1 \times 2^6 + 0 \times 2^5 + 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 0 \times 2^0 \\ &= 64 + 0 + 16 + 0 + 4 + 0 + 0 = 84 \end{aligned}$$

Excerpts from this work may be reproduced by instructors for distribution on a not-for-profit basis for testing or instructional purposes only to students enrolled in courses for which the textbook has been adopted. Any other reproduction or translation of this work beyond that permitted by Sections 107 or 108 of the 1976 United States Copyright Act without the permission of the copyright owner is unlawful.