

Problem 10.19. Encode the sequence 1101 with a Hamming (7,4) block code.

Solution

Coded bit sequence $\mathbf{c} = \mathbf{x} \cdot \mathbf{G}$, where \mathbf{G} is defined by (10.89).

$$\begin{aligned} \mathbf{c} &= [1101] \cdot \begin{bmatrix} 1000101 \\ 0100111 \\ 0010110 \\ 0001011 \end{bmatrix} \\ &= [1101001] \end{aligned}$$