



$$(n, k) = (7, 4)$$

$$\textcircled{1} D(x) = d_0 + d_1 x + d_2 x^2 + d_3 x^3 = 1 + x^3$$

$$\textcircled{2} x^{n-k} D(x) = x^3 (1 + x^3) = x^3 + x^6$$

$\textcircled{3}$ Find $R(x)$: remainder of $x^{n-k} D(x) / G(x)$

$$\begin{array}{r}
 x^3 + x + 1 \overline{) x^6 + x^3} \\
 \underline{x^6 + x^4 + x^3} \\
 x^4 \\
 \underline{x^4 + x^2 + x} \\
 x^2 + x
 \end{array}$$

$$R(x) = x^2 + x$$

$$\textcircled{4} V(x) = x^{n-k} D(x) + R(x)$$

$$= x^6 + x^3 + x^2 + x$$

Code word: $(v_0 \dots v_{n-k-1} d_0 \dots d_{k-1})$

$$= (0111001)$$