

b)

$$\sum_{m=1}^n \underbrace{a_m \oplus b_m}_{\sum_{i=1}^m} \oplus C_{m-1}$$

$$C_m = C_2 + C_1$$

$$\text{avec } C_1 = a_m \cdot b_m$$

$$C_2 = \sum_{i=1}^1 C_{m-1}$$

$$= (a_m \oplus b_m) \cdot C_{m-1}$$

$$\Rightarrow C_m = a_m \cdot b_m + (a_m \oplus b_m) \cdot C_{m-1}$$

$$\left\{ \begin{array}{l} \text{si } C_{m-1} = 0 \rightarrow C_m = a_m \cdot b_m \\ \text{si } C_{m-1} = 1 \rightarrow C_m = a_m \cdot b_m + a_m \oplus b_m \end{array} \right.$$

$$\Rightarrow C_m = a_m b_m + a_m b_m + a_m \oplus b_m$$