

$$⑤ M = \left\{ \begin{matrix} 0 & 1 & 2 & 3 \\ \{00, 01, 10, 11\}, \{0, 1\}, \{00, 01, 10, 11\}, 5, X, 0 \end{matrix} \right\}$$

↓
lost syndrome mod 4

J:

$$\begin{array}{r|rr} q & 0 & 1 \\ \hline 0 & 0 & 0 \\ 0 & 0 & 0 \\ \hline 0 & 0 & 0 \\ 0 & 0 & 0 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 1 & 0 & 1 \\ 1 & 0 & 1 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline 0 & 1 & 0 \\ 0 & 1 & 0 \\ \hline \end{array}$$

X:

$$\begin{array}{r|rr} q & 0 & 1 \\ \hline 0 & 1 & 1 \\ 0 & 1 & 1 \\ \hline 1 & 0 & 0 \\ 1 & 0 & 0 \\ \hline 1 & 0 & 0 \\ 1 & 0 & 0 \\ \hline \end{array}$$

$$0 = 1 \text{ poly } q = 0 \vee q = 1 \text{ bo}$$

$$\text{whence } q(5) \text{ period } \equiv 0 \vee 1 \text{ (mod 4)}$$

