

d)  $y(D) = D^{12} + D^{16} + D^{15} + D^{14} + D^{12} + D^{10} + D^9 + D^8 + D^7 + D^6 + D^2$

↓  
Divisible by  $g(D)$

2.4

$D^{15} + D^{11} + D^{10} + D^9 + D^8 + D^7 + D^5 + D^3 + D^2 + D + 1$	$y(D)$	$D^2 + D + 1$
$  \begin{array}{r}  D^{12} \quad D^{13} \quad D^{12} \quad D^{11} \quad D^{10} \quad D^9 \quad D^8 \quad D^7 \quad D^6 \quad D^5 \quad D^4 \quad D^3 \\  \hline  D^{16} \quad D^{15} \quad D^{14} \quad D^{13} \quad D^{12} \quad D^{11} \quad D^{10} \quad D^9 \quad D^8 \quad D^7 \quad D^6 \quad D^5 \\  \hline  D^{16} \quad D^{12} \quad D^{11} \quad D^{10} \quad D^9 \quad D^8 \quad D^7 \quad D^6 \quad D^5 \quad D^4 \quad D^3 \quad D^2 \\  \hline  D^{15} \quad D^{14} \quad D^{13} \quad D^{12} \quad D^{11} \quad D^{10} \quad D^9 \quad D^8 \quad D^7 \quad D^6 \quad D^5 \quad D^4 \\  \hline  D^{15} \quad D^{14} \quad D^{13} \quad D^{12} \quad D^{11} \quad D^{10} \quad D^9 \quad D^8 \quad D^7 \quad D^6 \quad D^5 \quad D^4 \\  \hline  D^{11} \quad D^{13} \quad D^{12} \quad D^{11} \quad D^8 \quad D^7 \quad D^3 \quad + 1  \end{array}  $		
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Not valid</div>		
$\neq 0$		

- OPTIMAL RECEIVER

$$\max \left[ (r, s) - \frac{1}{2} \|s\|^2 \right]$$

$$\text{Re} \left\{ A \cdot \int_{-\infty}^{+\infty} z(t) e^{-j \pi \sum_n u_n} q(t - nT) dt \right\}$$

complex envelope of  $r(t) : z(t)$