

* $m < n$

$$G(s) = \frac{Y(s)}{U(s)} = \frac{(b_m s^m + b_{m-1} s^{m-1} + \dots + b_1 s + b_0) X(s)}{(a_n s^n + a_{n-1} s^{n-1} + \dots + a_1 s + a_0) X(s)}$$

$X(s) = \mathcal{L}\{x(t)\}$ = isyarat sembarang

$$\left[\begin{array}{l} \text{Jika } Y(s) = (b_m s^m + b_{m-1} s^{m-1} + \dots + b_1 s + b_0) X(s) \\ \text{maka } U(s) = (a_n s^n + a_{n-1} s^{n-1} + \dots + a_1 s + a_0) X(s) \end{array} \right]$$

$$\frac{a}{b} = \frac{3}{4} \rightarrow \left[\begin{array}{l} \text{Jika } a=3 \\ \text{maka } b=4 \end{array} \right]$$

$$\rightarrow U(s) = a_n s^n X(s) + a_{n-1} s^{n-1} X(s) + \dots + a_1 s X(s) + a_0 X(s)$$

Laplace Inverse:

$$u(t) = a_n \underbrace{\frac{d^n x(t)}{dt^n}}_{x_n} + a_{n-1} \underbrace{\frac{d^{n-1} x(t)}{dt^{n-1}}}_{x_{n-1}} + \dots + a_1 \underbrace{\frac{dx(t)}{dt}}_{x_2} + a_0 \underbrace{x(t)}_{x_1}$$