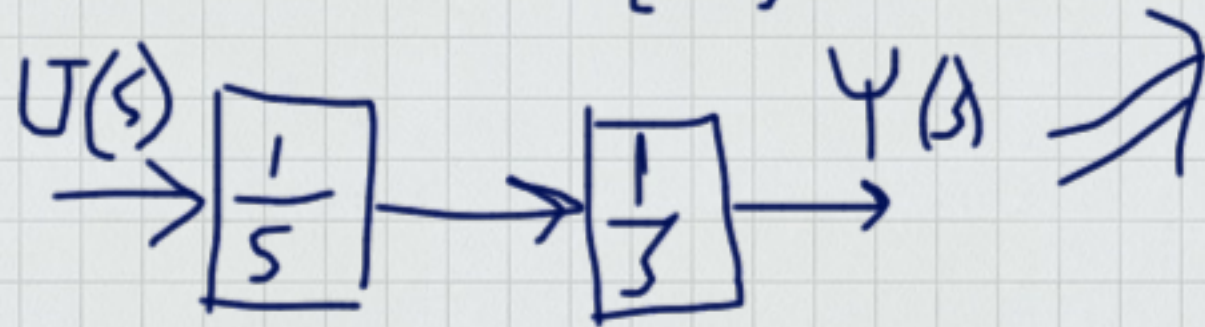
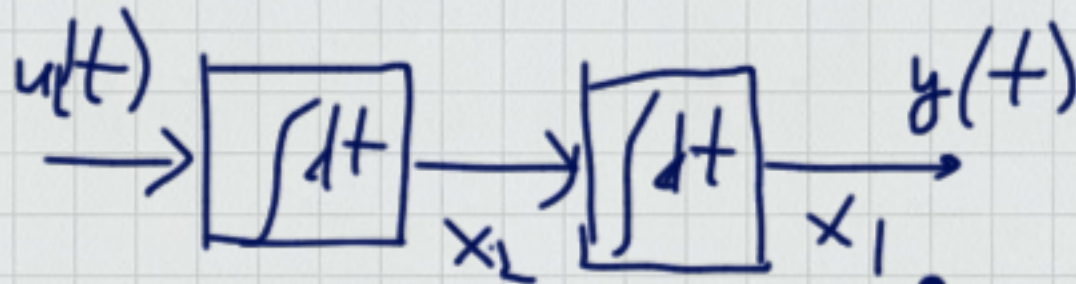


$$\begin{aligned}
 G(s) &= [C(sI - A)^{-1}B + D] \\
 &= \begin{bmatrix} 1 & 0 \end{bmatrix} \begin{bmatrix} -\frac{1}{s} & \frac{1}{s^2} \\ 0 & -\frac{1}{s} \end{bmatrix} \begin{bmatrix} 0 \\ 1 \end{bmatrix} + [0] \\
 &= \begin{bmatrix} \frac{1}{s} & \frac{1}{s^2} \end{bmatrix} \begin{bmatrix} 0 \\ 1 \end{bmatrix} = \frac{1}{s^2}
 \end{aligned}$$



double
integrator
plant



$$\left. \begin{aligned} y &= x_1 \\ \dot{x}_1 &= x_2 \\ \dot{x}_2 &= u \end{aligned} \right\} \begin{bmatrix} \dot{x}_1 \\ \dot{x}_2 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

$$y = \begin{bmatrix} 1 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + [0] u$$