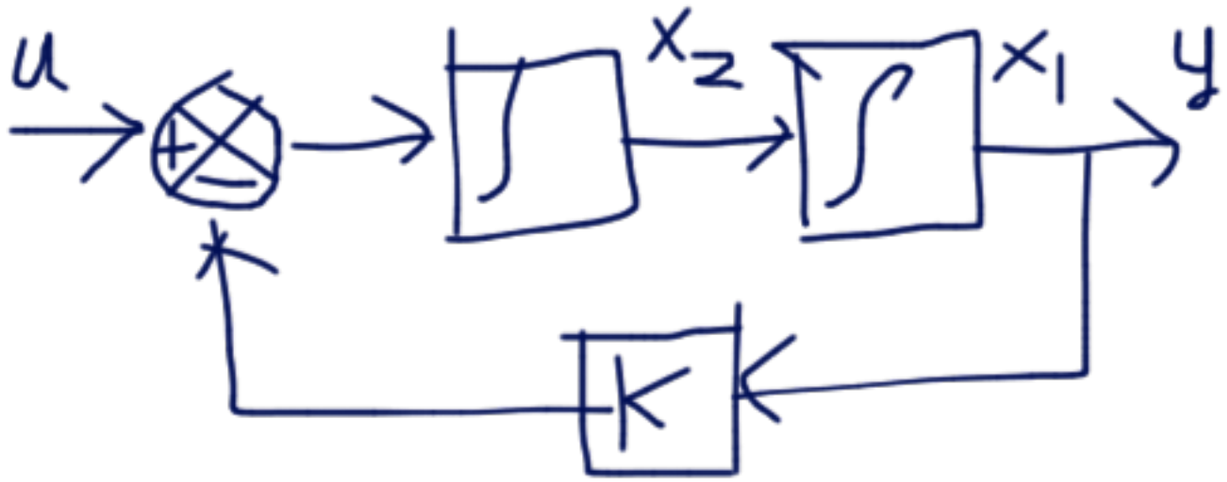
* Bagaimana dengan u



$K > 0$

$\dot{x}_1 = x_2$

$\dot{x}_2 = -Kx_1 + u$

$$\dot{x} = \underbrace{\begin{bmatrix} 0 & 1 \\ -K & 0 \end{bmatrix}}_{A} x + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

$$[\lambda I - A] = \begin{bmatrix} \lambda & -1 \\ K & \lambda \end{bmatrix}$$

$$\det [\lambda I - A] = \lambda^2 + K = 0$$

$$\lambda^2 = -K \rightarrow \lambda_1 = -j\sqrt{K}$$

$$\lambda_2 = +j\sqrt{K}$$

Bagian Real non-negatif $\Longrightarrow$ TIDAK STABIL