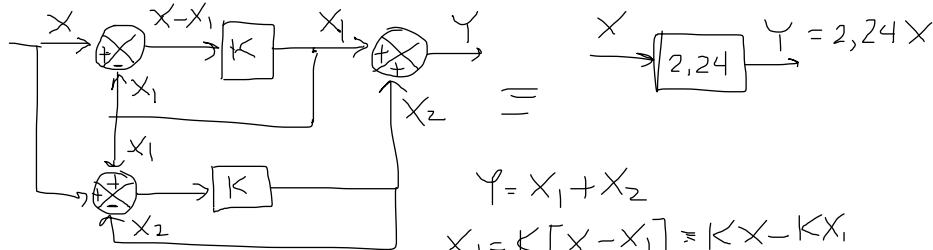


Bab I Pengenalan Sistem Linier (Introduction to Linear Systems)
 Bab II Pemodelan Sistem Linier (Linear Systems Modelling)

- * Urgensi/pentingnya pemodelan sistem
- * Pemodelan Watak Alir (Transfer Characteristic)
- * Pemodelan Nisbah Alir (Transfer Function)
 → Transf. LAPLACE

→ * Pemodelan Ruang Keadaan (State Space)

Solal MID .



$$Y = X_1 + X_2$$

$$X_1 = K[X - X_1] \approx KX - KX_1$$

$$X_2 = K[X + X_1 - X_2]$$

$$= KX + KX_1 - KX_2$$

$$X_2 + KX_2 = KX + K\left[\frac{K}{1+K}\right]X$$

$$[1+K]X_2 = \left[K + \frac{K^2}{1+K}\right]X = \frac{K+K^2+K^2}{1+K}X = \frac{K+2K^2}{1+K}X$$

$$X_2 = \frac{K+2K^2}{[1+K]^2}X \rightarrow Y = X_1 + X_2$$

$$Y = \frac{2K+3K^2}{[1+K]^2}X = 2,24X$$

$$\frac{2K+3K^2}{(1+K)^2} = 2,24$$

$$= \left(\frac{K}{1+K} + \frac{K+2K^2}{(1+K)^2}\right)X$$

$$= \frac{K+K^2+K+2K^2}{[1+K]^2}X$$

$$2K+3K^2 = 2,24(1+2K+K^2) = 2,24 + 4,48K + 2,24K^2$$

$$0,76K^2 - 2,48K - 2,24 = 0 \rightarrow \text{Car } K =$$

$$= \frac{2,48 \pm \sqrt{(2,48)^2 + 4(0,76)(2,24)}}{1,52}$$

$K = 4$

$$\frac{8+48}{25} = \frac{56}{25} = 2,24$$