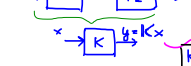


ALJABRA BAGAN KOTAK

Block Diagram Algebra

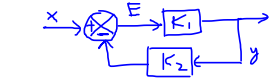
* Hubungan serial (Cascade)



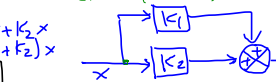
* Hubungan paralel



* Hubungan Umpan Balik (feedback)



* Hubungan Umpan Maju (feed forward)



* Representasi PROSES (sistem)



4-perseri panjang
kurus-sangka

* Notasi Proses, misalnya:

* Kalimat/kata

* Huruf/angka:

* Operasi math:

$x(t) \rightarrow y(t)$

$y(t) = \int x(t) dt \leftrightarrow x(t) = \frac{dy(t)}{dt}$

$u(t) = \frac{d}{dt} x(t) \leftrightarrow x(t) = \int u(t) dt$

$x(t) \rightarrow \log y(t) = K \log |x(t)|, x(t) > 0$

Contoh: $0,2 \rightarrow \log(0,2) = -1$

$160,0 \rightarrow \log(160) = 2$

"equalizer"

ANALISIS ISYARAT & SISTEM

Part II SYSTEMS

* Pengertian SISTEM

* Representasi SISTEM \rightarrow BAGAN KOTAK & ALJABRA-mya

* Macam2 SISTEM \rightarrow 10 macam (5 pasang)

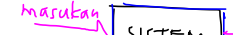
* Pemodelan SISTEM \rightarrow 3 macam

\rightarrow TEST LAB II \rightarrow Nilai RHP \rightarrow Nilai ISA

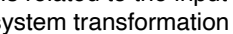
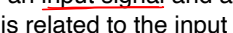
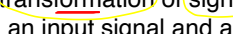
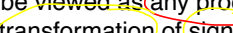
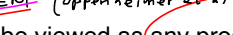
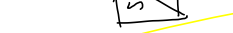
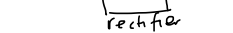
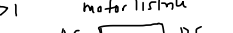
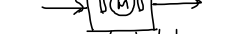
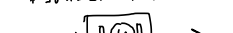
* Pengertian "SISTEM" (Oppenheimer et al hal 35)

A system can be viewed as any process that results in the transformation of signals, thus a system has an input signal and an output signal which is related to the input through the system transformation

Contoh:



* Symbol = Khuruf



$$K = \frac{K_1}{1 + K_1 K_2}$$

(umpan-balik negatif)

\Rightarrow umpan-balik positif

\Rightarrow umpan-balik satuan (unity feedback)

$K_2 = 1$

negative positif

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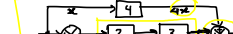
negative positif

negative positif

negative positif

negative positif

* Contoh MATEMATIS



* Cara I. Menggunakan Hubungan?

Hubungan serial: $K_1 = (2)(3) = 6$

Hubungan umpan balik: $K_2 = \frac{K_1}{1 + 0,5 K_1} = \frac{6}{1 + 3} = 1,5$

Hubungan umpan maju: $K_3 = 4 + K_2 = 4 + 1,5 = 5,5$

Jadi $K = 5,5$

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* Cara II. Menggunakan perbandingan & pertemuan ISYARAT

$IE = x - 0,5(y - 4x)$

$y - 4x = 6E$

$= 6[x - 0,5(y - 4x)]$

$= 6x - 3y + 12x$

$y - 4x = 18x - 3y$

$4y = 22x$

$y = \frac{22}{4}x = 5,5x$

$K = 5,5$

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* Contoh mekanik

* Contoh Elektrik

Next:

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