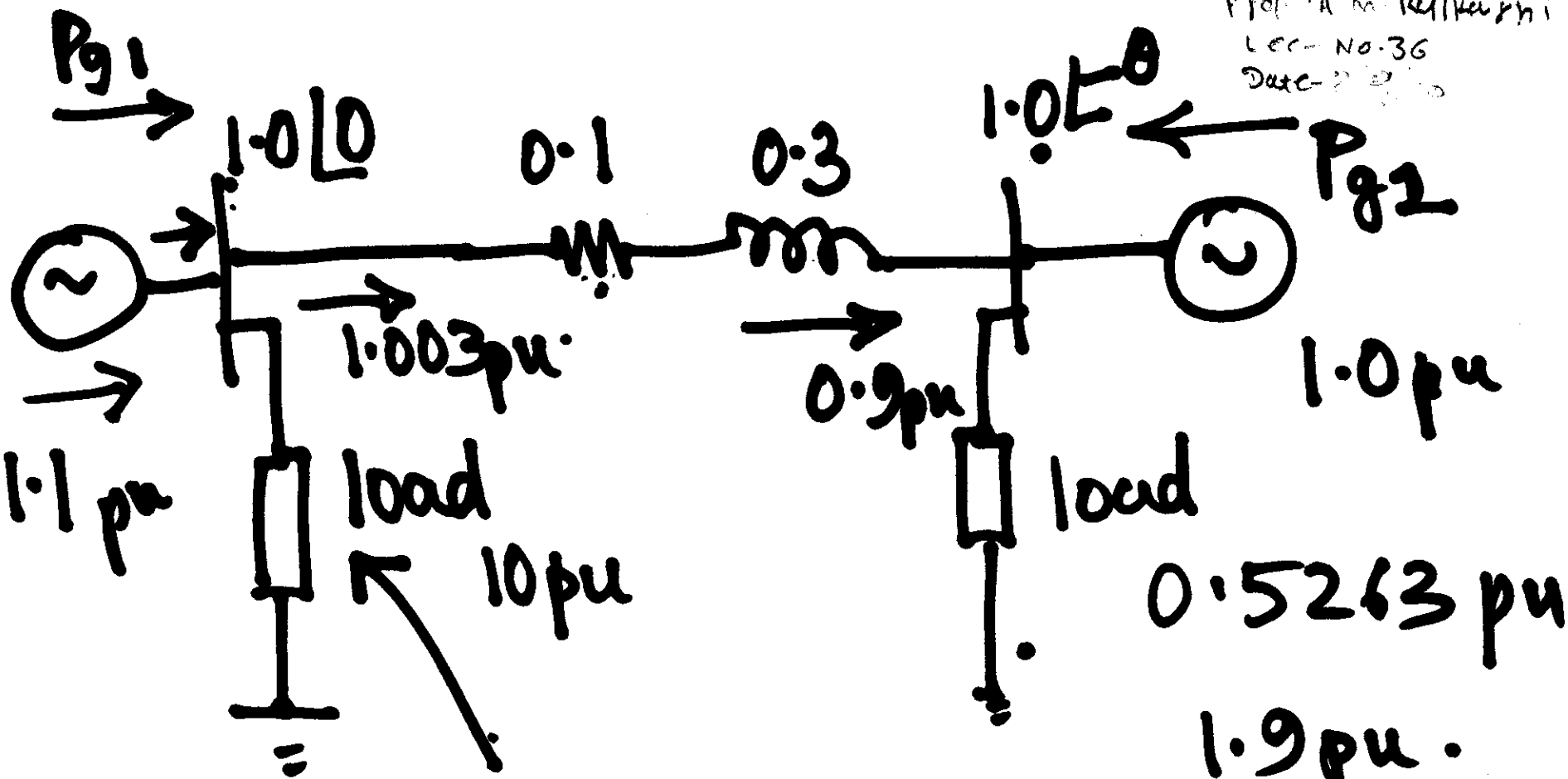
Prof. A. M. Kulkarni
Lec- No. 36
Date-



δ_1
ω_1
ψ_1

(I) $=$

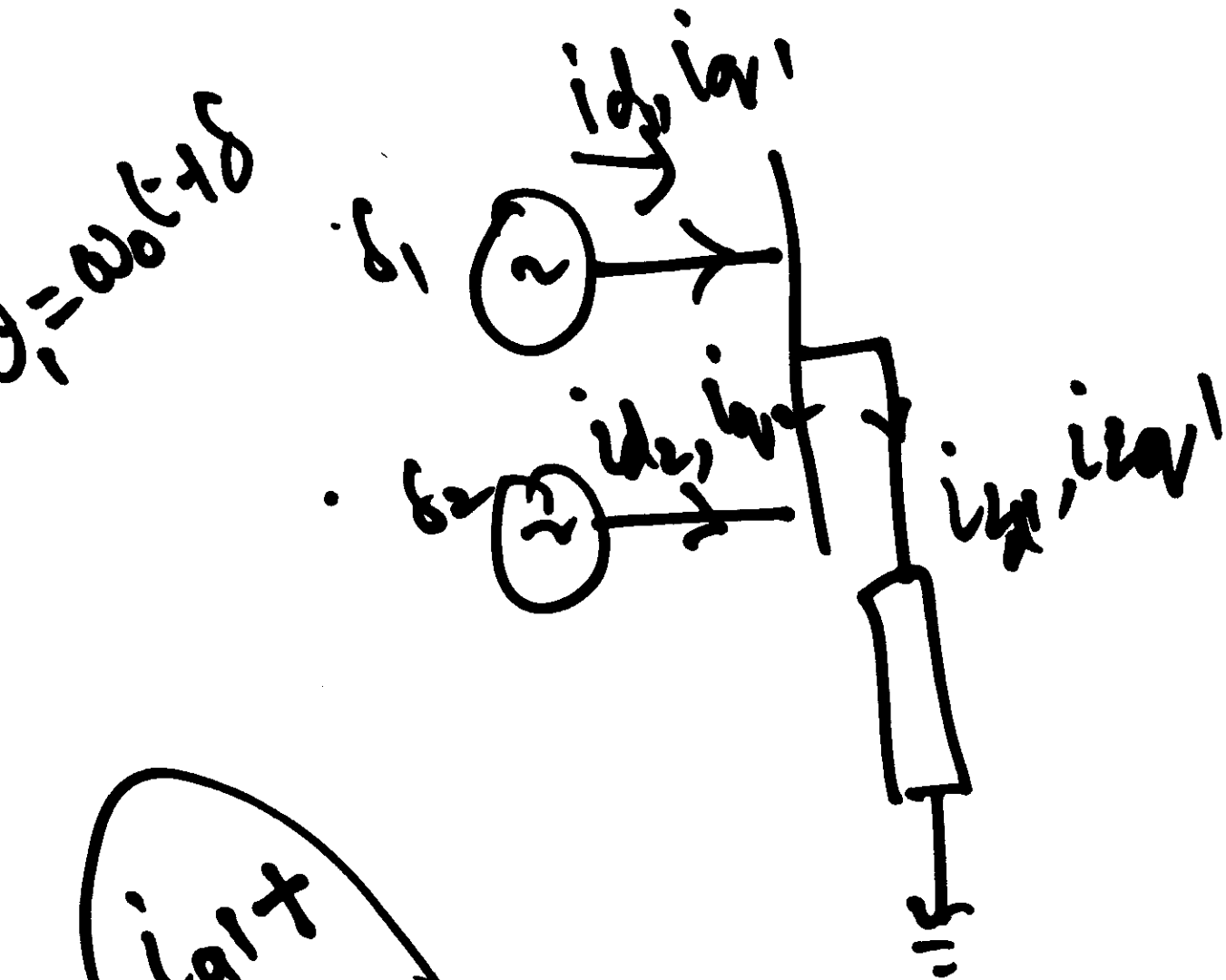
$$\left.\begin{aligned} V_{an_1} &= \sqrt{\tfrac{2}{3}} \sin \omega_0 t \\ V_{bn} &= \sqrt{\tfrac{2}{3}} \sin\left(\omega_0 t - \tfrac{2\pi}{3}\right) \\ V_{cn} &= \sqrt{\tfrac{2}{3}} \sin\left(\omega_0 t + \tfrac{2\pi}{3}\right) \end{aligned}\right\} \; 120$$

$$\omega_0 = 314 \text{ rad/s}.$$

δ_2
ω_2
ψ_2

$$V_{an_2} = \sqrt{\tfrac{2}{3}} \sin(\omega t - \theta) \qquad \underline{1 \angle -\theta}$$

$\vdots$



$i_{d1} + i_{d2} = i_{Ld1}$

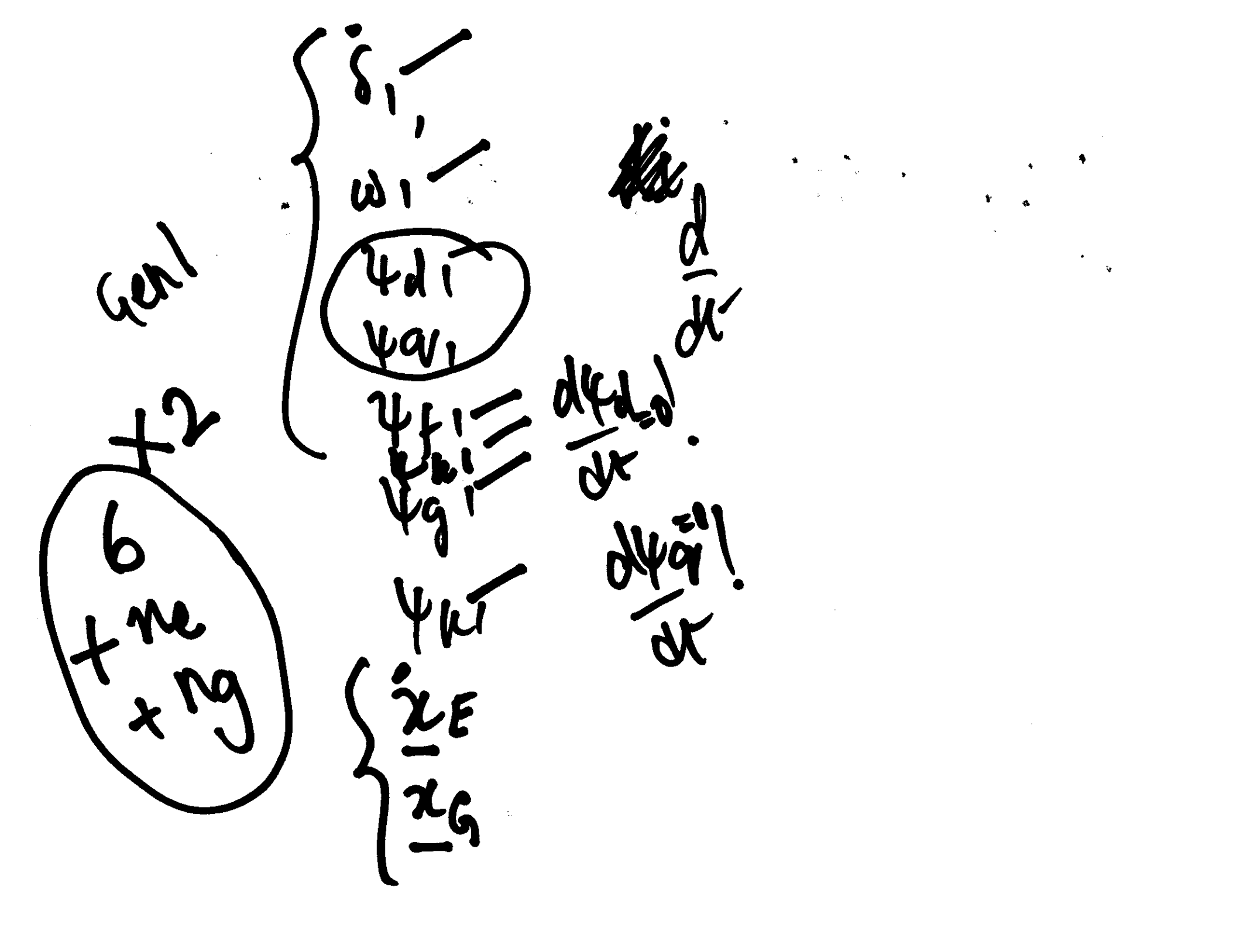
$i_{a1} + i_{a2} = i_{La}$

(4)

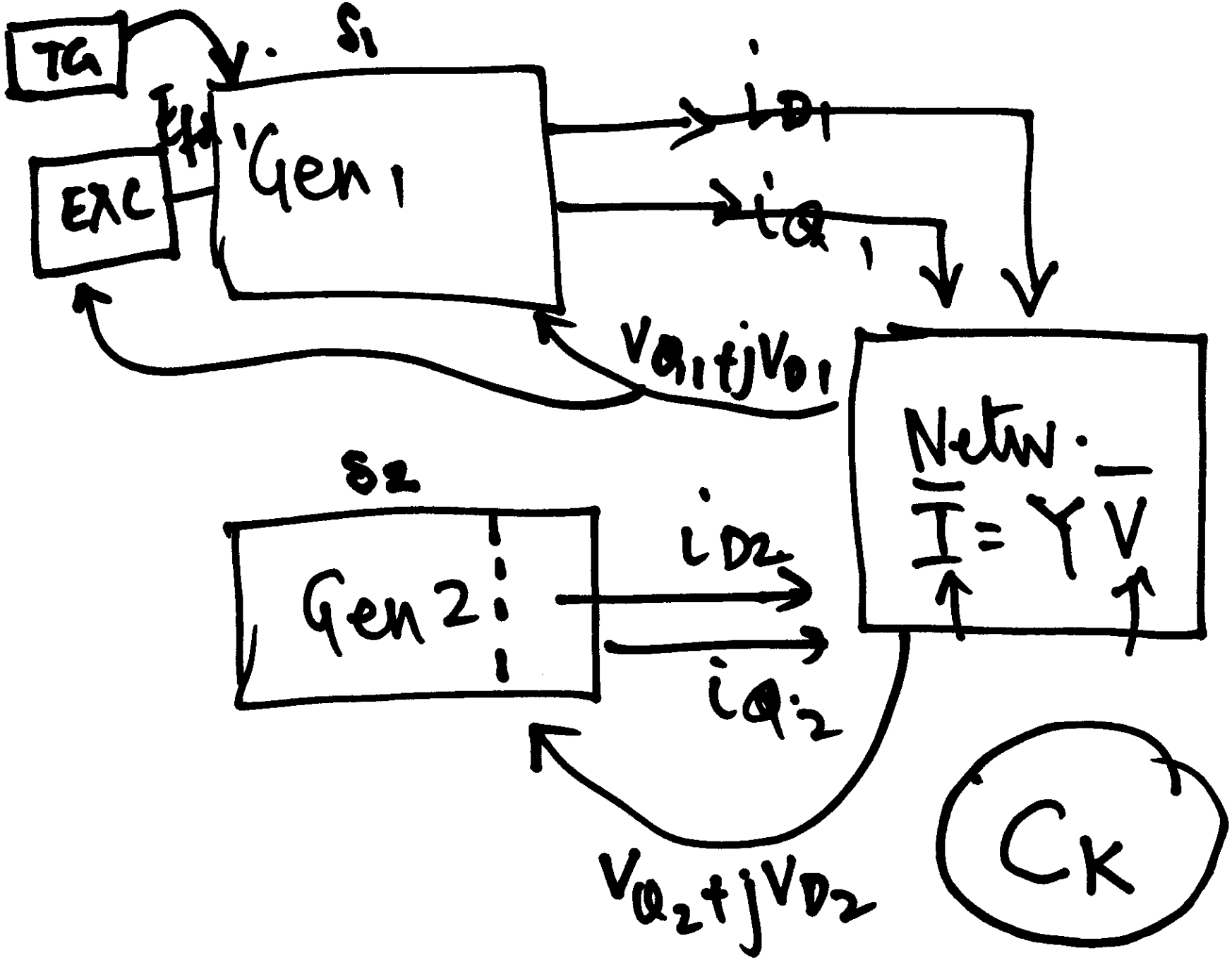
$$\frac{I_1 = (Y)\,1}{I = 4\,4q,\ 4}$$

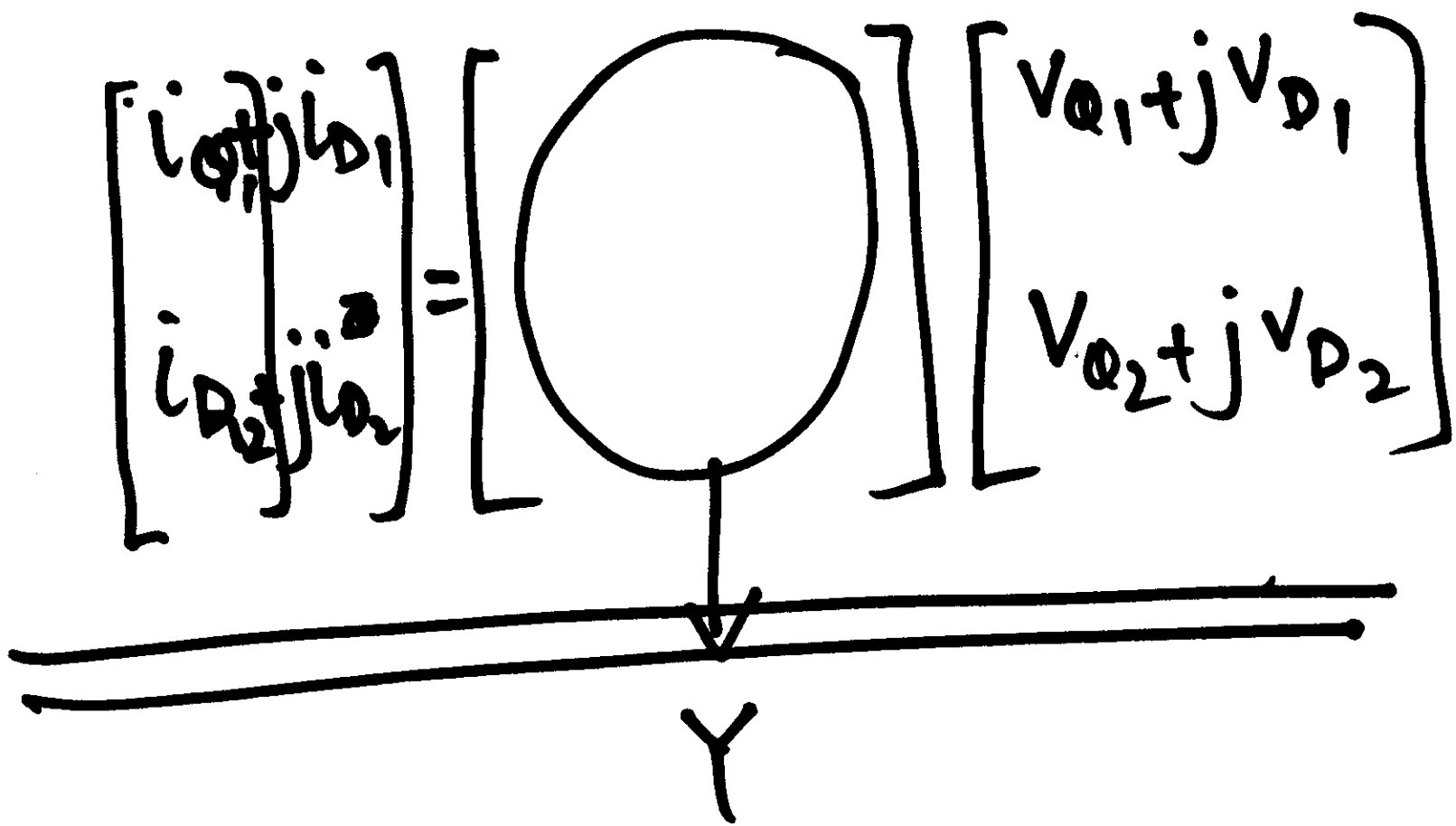
(4) algebraic

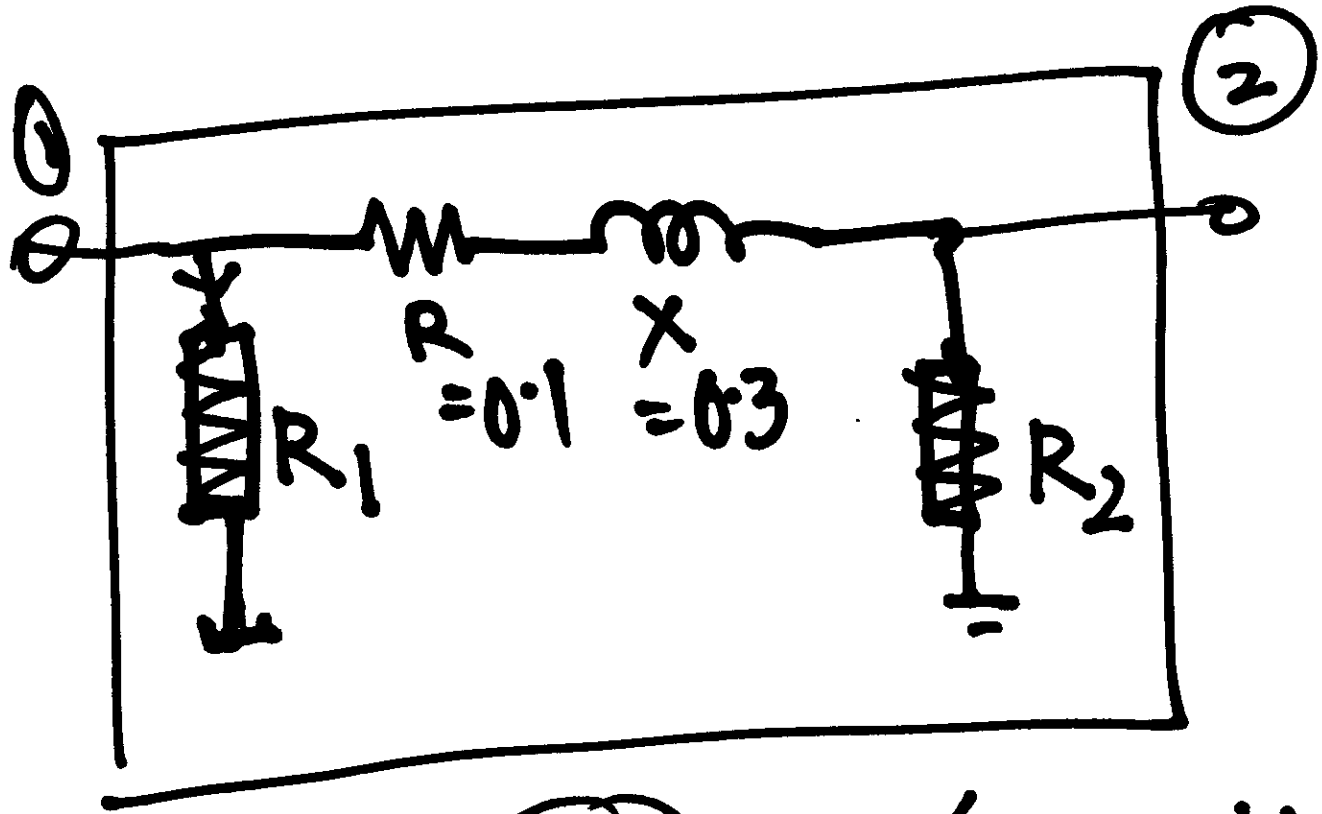
(2)


Gen
+2
6
+ne
+ng
$\dot{\delta}_1$
ω_1
ψ_{d1}
ψ_{q1}
ψ_{f1}
ψ_{k1}
ψ_{g1}
ψ_{kT}
$\dot{x}_E$
x_G
$\frac{d}{dt}$
$\frac{d\psi_{d1}}{dt}$
$\frac{d\psi_{q1}}{dt}$

$$\sqrt{fD^2 + fe^2} = \sqrt{fd_i^2 + fq_i^2} \cdot |$$


TG
EXC
Gen 1
δ_1
i_{D1}
i_{Q1}
$V_{Q1}+jV_{D1}$
Netw.
$\bar{I} = Y\bar{V}$
δ_2
Gen 2
i_{D2}
i_{Q2}
$V_{Q2}+jV_{D2}$
CK


$i_{Q_1}+j i_{D_1}$
$i_{Q_2}+j i_{D_2}$
$V_{Q_1}+j V_{D_1}$
$V_{Q_2}+j V_{D_2}$
Y



$$\begin{bmatrix} V_{a1} \\ V_{b1} \\ V_{c1} \end{bmatrix} = R_1 \begin{bmatrix} i_{a1} \\ i_{b1} \\ i_{c1} \end{bmatrix}$$

$$\left(V_{q1} + jV_{d1}\right) = R_1\left(i_{q1} + j i_{d1}\right)$$

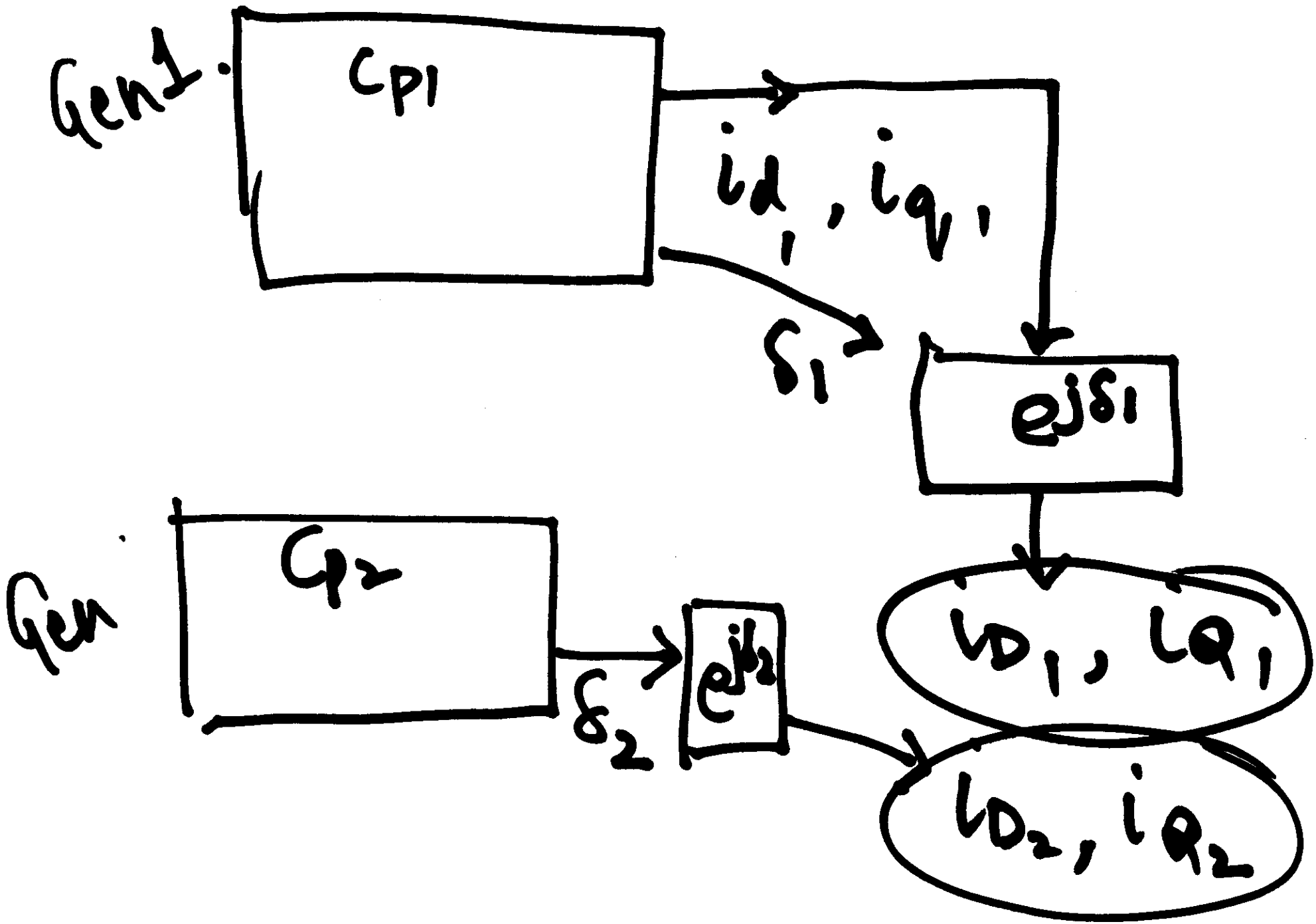
$$(i_{qL} + j i_{dL}) = \frac{(V_{q1} + j V_{d1}) - (V_{q2} + j V_{d2})}{r + jx}$$

steady state $\Rightarrow \frac{di_{qL}}{dt} = 0$

$\frac{di_{dL}}{dt} \neq 0.$

$\omega_0 \rightarrow \underline{\omega_B}$

$x = \omega_B L.$


Gen1
CP1
id1, iq1
δ1
ejδ1
Gen2
CP2
δ2
ejδ2
LD1, LQ1
LD2, iQ2

te^{0t}