

$$Y_n(j\omega) \cdot \underline{E} = \underline{I}_s$$

$$\begin{bmatrix} 1/3 + j4 & -j4 \\ -j4 & j4 + 1/2 \end{bmatrix} \begin{bmatrix} E1 \\ E2 \end{bmatrix} = \begin{bmatrix} 3 - I1 \\ I2 \end{bmatrix}$$

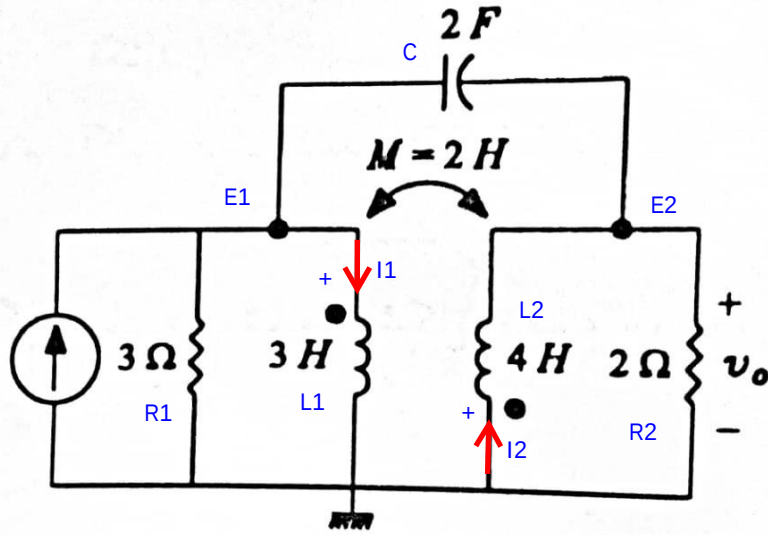
$$I = V / (j\omega L)$$

$$\underline{I} = \frac{1}{j\omega} \underline{V} = \begin{bmatrix} I1 \\ I2 \end{bmatrix}$$

$$\underline{V} = \underline{L} \underline{I}$$

$$i_s = 3 \cos 2t$$

$\omega = 2$
 $I_s = 3$



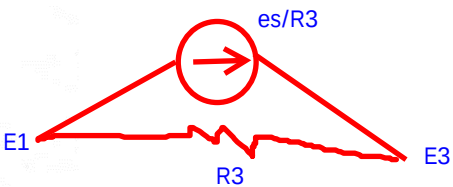
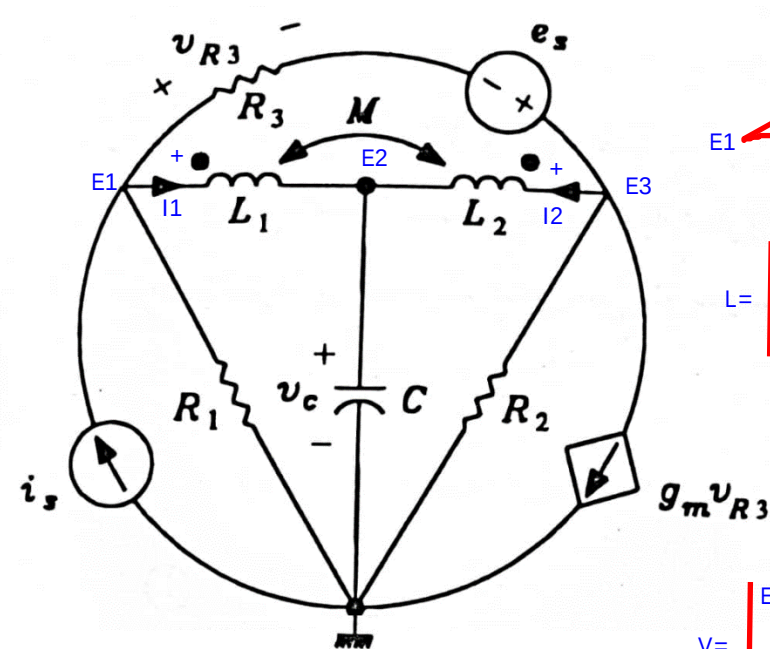
$$\underline{V} = \begin{bmatrix} V1 \\ V2 \end{bmatrix} = \begin{bmatrix} E1 \\ -E2 \end{bmatrix}$$

$$\underline{L} = \underline{L}^{-1}$$

$$\begin{bmatrix} 3 & +2 \\ +2 & 4 \end{bmatrix}$$

$$V_{R3} = (E_1 - E_3) + E_s$$

$$Y_n(j\omega) \cdot E = I_s$$

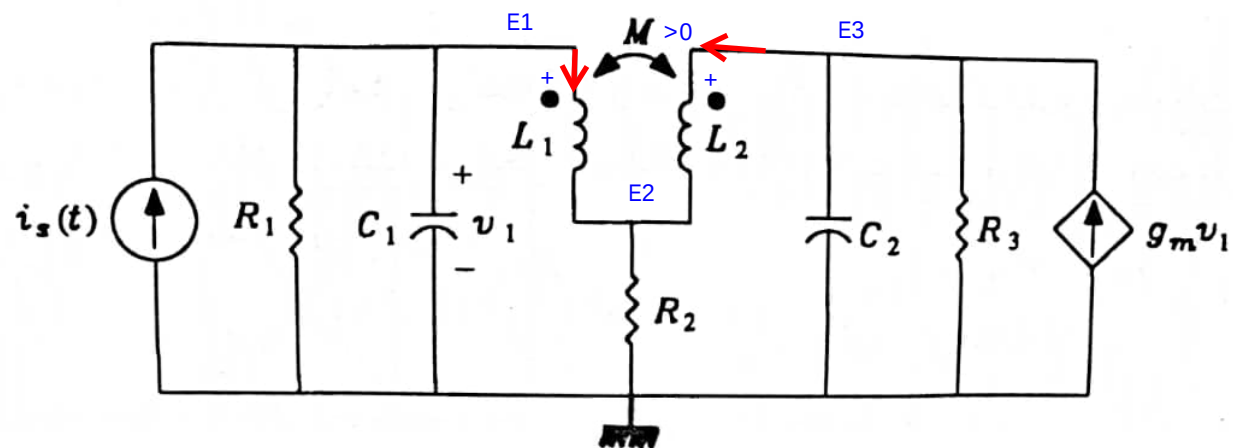


$$L = \begin{bmatrix} L_1 & +M \\ +M & L_2 \end{bmatrix}$$

$$V = \begin{bmatrix} E_1 - E_2 \\ E_3 - E_2 \end{bmatrix}$$

$$\begin{bmatrix} 1/R_3 + 1/R_1 & 0 \\ 0 & jC\omega \\ -1/R_3 & 0 \end{bmatrix} \begin{bmatrix} E_1 \\ E_2 \\ E_3 \end{bmatrix} = \begin{bmatrix} I_s - E_s/R_3 - I_1 \\ I_1 + I_2 \\ E_s/R_3 - I_2 - g_m V_{R3} \end{bmatrix}$$

$$V_{R3} = E_1 - E_3 + E_s$$



$$1/R_1 + j\omega C_1$$

$$0$$

$$0$$

$$0$$

$$1/R_2$$

$$0$$

$$0$$

$$0$$

$$1/R_3 + j\omega C_2$$

$$V_L1 = E_1 - E_2$$

$$V_L2 = E_3 - E_2$$

$$V_1 = E_1$$