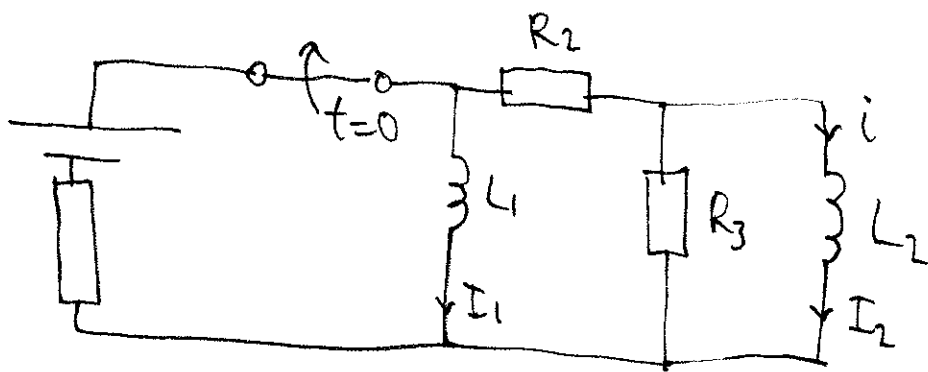


C-15)



$$R_1 = R_2 = R_3 = 6\Omega$$

$$L_1 = 2\sqrt{2}\text{ H}$$

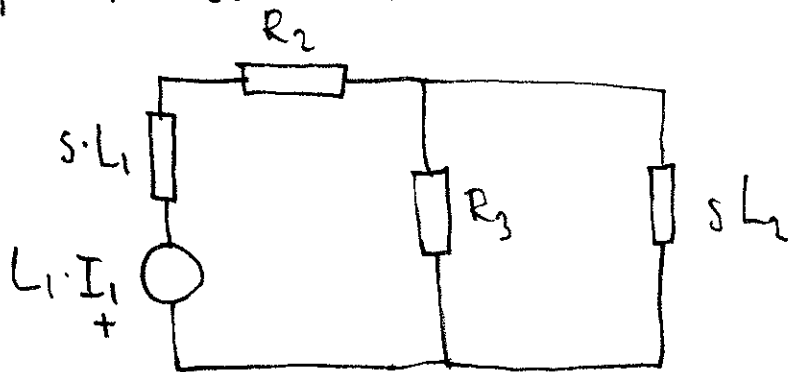
$$L_2 = \sqrt{2}\text{ H}$$

$$E = 12\text{ V}$$

$$\omega L_1 = 0 \Rightarrow I_2 = 0 \text{ da } t < 0$$

$$I_1 = \frac{E}{R_1} \Rightarrow I_1 = 2\text{ A}$$

Operator schema:



$$I_{\text{tot}}(s) = \frac{L_1 I_1}{\frac{sL_2 R_3}{sL_2 + R_3} + sL_1 + R_2} = \frac{2\sqrt{2} \cdot 2}{\frac{s \cdot \sqrt{2} \cdot 6}{s \cdot \sqrt{2} + 6} + 6 + 2\sqrt{2} \cdot s} = \frac{2\sqrt{2} \cdot 2 \cdot (s \cdot \sqrt{2} + 6)}{s \cdot \sqrt{2} \cdot 6 + (6 + 2\sqrt{2} \cdot s)(s \cdot \sqrt{2} + 6)}$$

$$= \frac{8s + 24 \cdot \sqrt{2}}{s \cdot \sqrt{2} \cdot 6 + s \cdot \sqrt{2} \cdot 6 + 36 + 4s^2 + 12\sqrt{2} \cdot s} = \frac{4 \cdot (2s + 6\sqrt{2})}{s \cdot \sqrt{2} \cdot 24 + 4s^2 + 36}$$

$$= \frac{2s + 6\sqrt{2}}{s^2 + 6\sqrt{2} \cdot s + 9}$$

$$I(s) = -I_{\text{tot}}(s) \cdot \frac{R_3}{R_3 + sL_2} = -\frac{(2s + 6\sqrt{2}) \cdot 6}{(s^2 + 6\sqrt{2} \cdot s + 9)(6 + s \cdot \sqrt{2})} = -\frac{6 \cdot 2 \cdot (s + 3\sqrt{2})}{(s^2 + 6\sqrt{2} + 9)(s + 3\sqrt{2}) \cdot \sqrt{2}}$$

$$= -2\sqrt{2} \cdot \frac{3}{(s + 3\sqrt{2})^2 - 3^2}$$

$$\Rightarrow i(t) = -2\sqrt{2} \cdot e^{-3\sqrt{2} \cdot t} \cdot \sinh(3t)$$