

۱- ترانس (صحیح است)

$$KCL^{(A)} : 6 - i_1 = i_r \Rightarrow i_1 = 6 - i_r$$

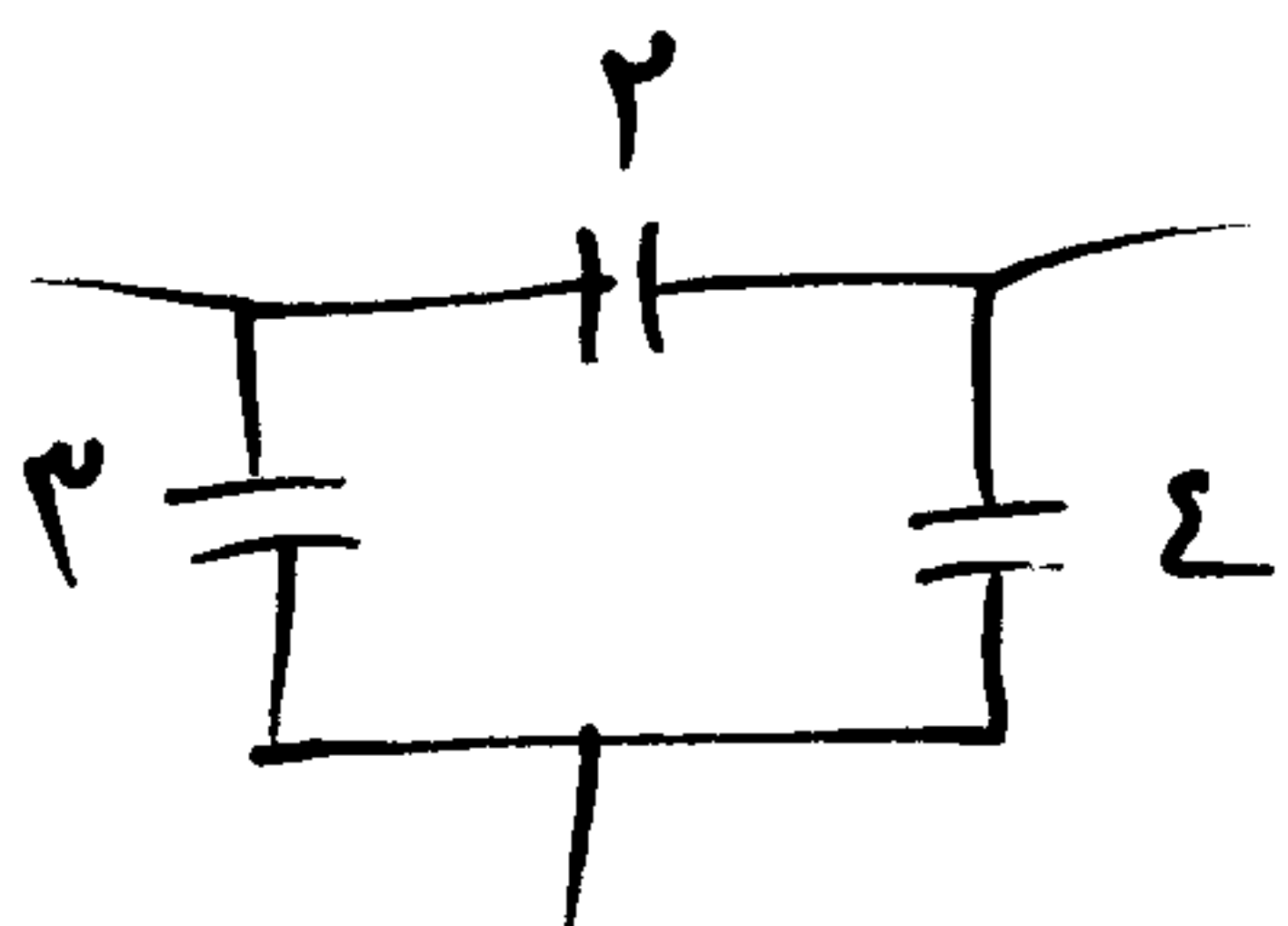
$$KVL : v_1 = 2(6 - i_1) + v_r$$

$$\begin{cases} v_1 = 0 \cdot i_1 + \sum i_r = \sum i_r \\ v_r = -\sum i_1 + 0 \cdot i_r = -\sum i_1 \end{cases} \Rightarrow \sum i_r = 12 - 2i_1 - \sum i_1 \Rightarrow i_r = 12 - 1.5i_1$$

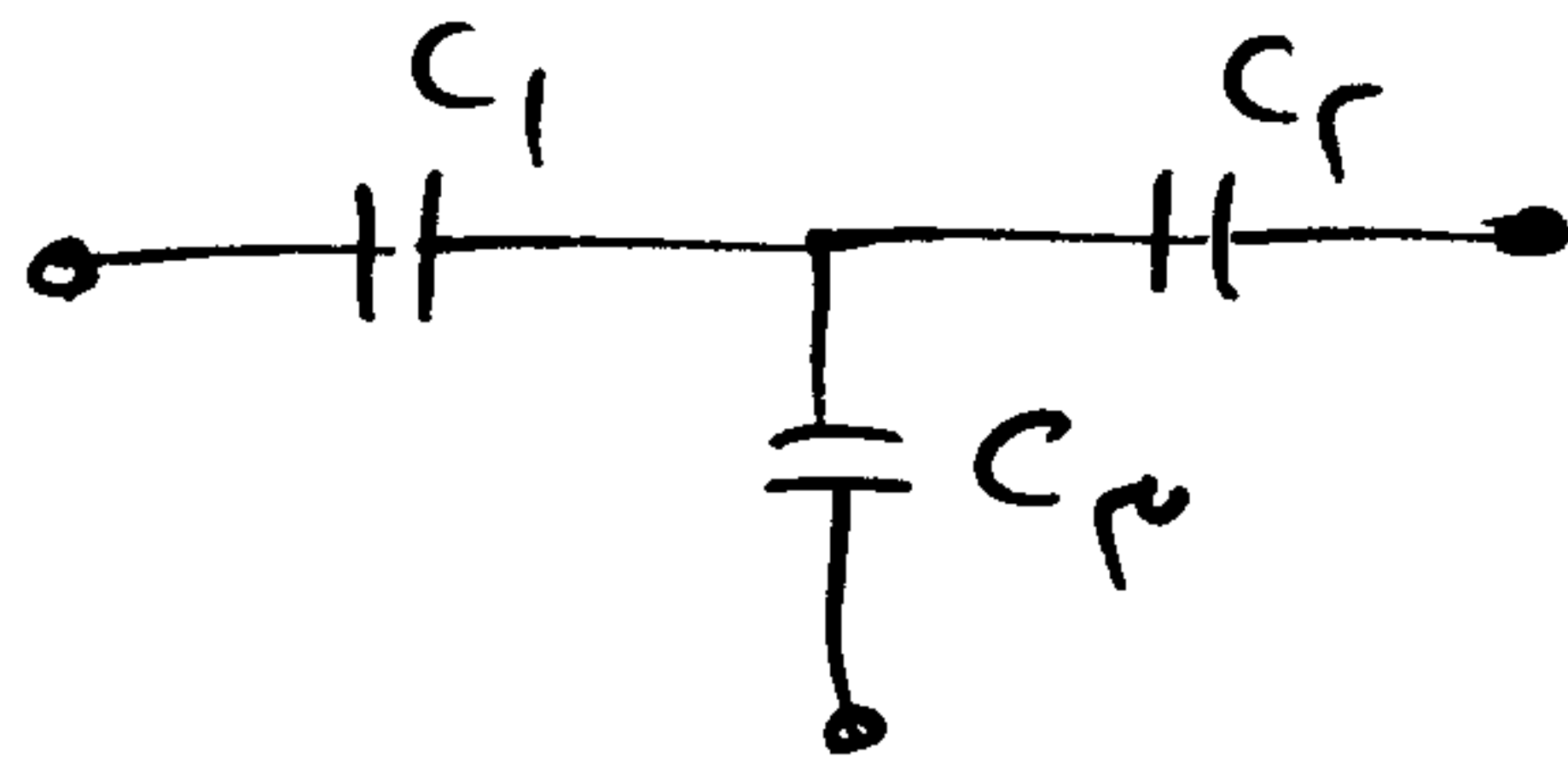
$$\begin{cases} i_1 = 6 - i_r \\ i_r = 12 - 1.5i_1 \end{cases} \Rightarrow i_1 = 6 - (12 - 1.5i_1) \Rightarrow i_1 = 0$$

$$P_r = 2(6 - i_1)^2 = 2(6 - 0)^2 = 72 \text{ W}$$

۲- ترانس (۱)



⇒



$$\frac{1}{C_1} = \frac{\frac{1}{3} \times \frac{1}{2}}{\frac{1}{3} + \frac{1}{2} + \frac{1}{2}} = \frac{\frac{1}{6}}{\frac{4}{3}} = \frac{2}{8}$$

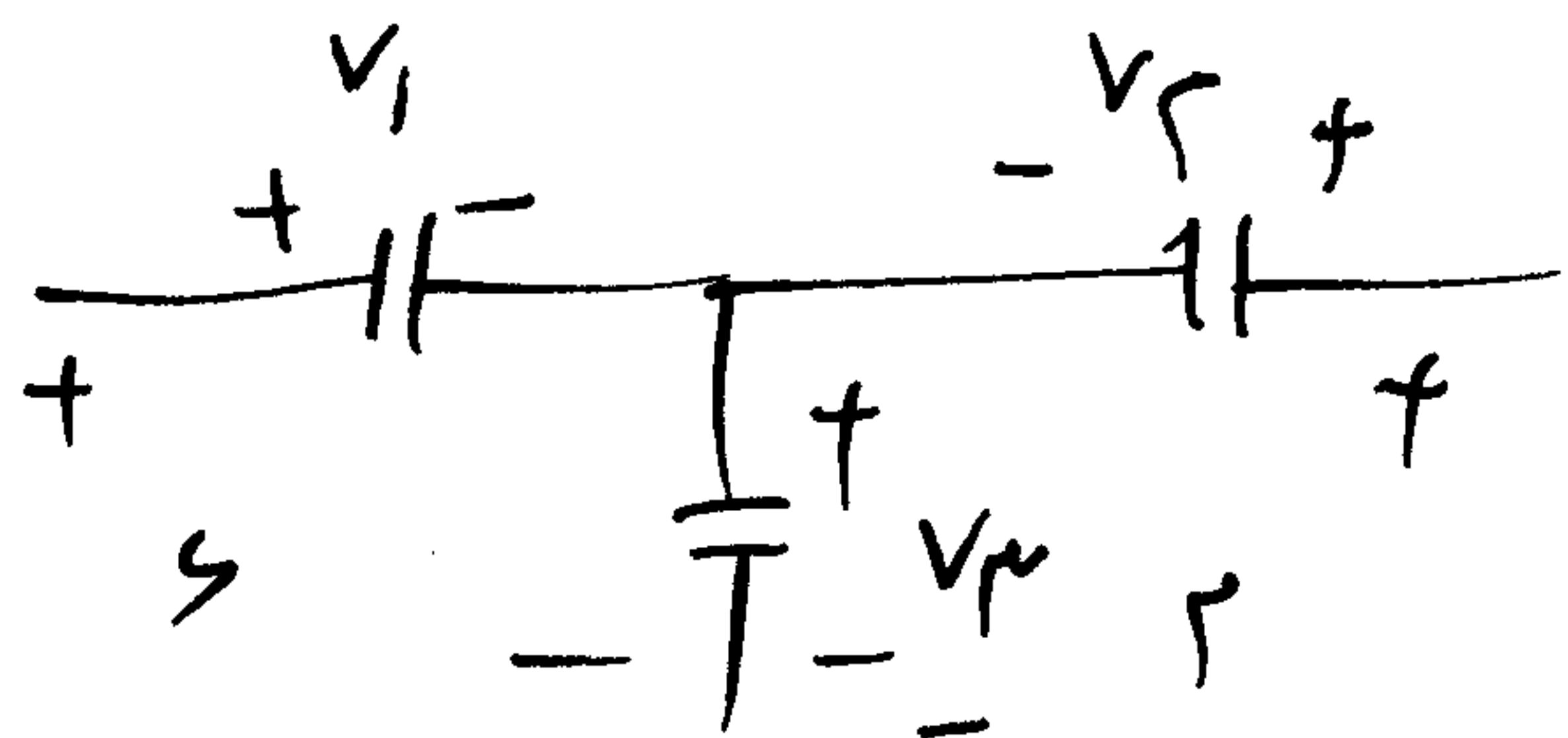
$$\frac{1}{C_2} = \frac{\frac{1}{3} \times \frac{1}{2}}{\frac{1}{3} + \frac{1}{2} + \frac{1}{2}} = \frac{2}{8} \quad , \quad \frac{1}{C_3} = \frac{\frac{1}{2} \times \frac{1}{2}}{\frac{1}{3} + \frac{1}{2} + \frac{1}{2}} = \frac{2}{12}$$

$$A \delta(t) \quad \frac{2}{6} \quad B \delta(t) \quad \frac{2}{8}$$



توجه دو حلقه فازی داریم.
پس در دو حلقه ضربی رهنظر بگیریم.

ص



$$V_1 = \frac{A}{\frac{C}{1}} = A \left(\frac{1}{C_1} \right) = \frac{2A}{s} \quad , \quad V_\gamma = \frac{B}{C_\gamma} = B \left(\frac{2}{\Lambda} \right)$$

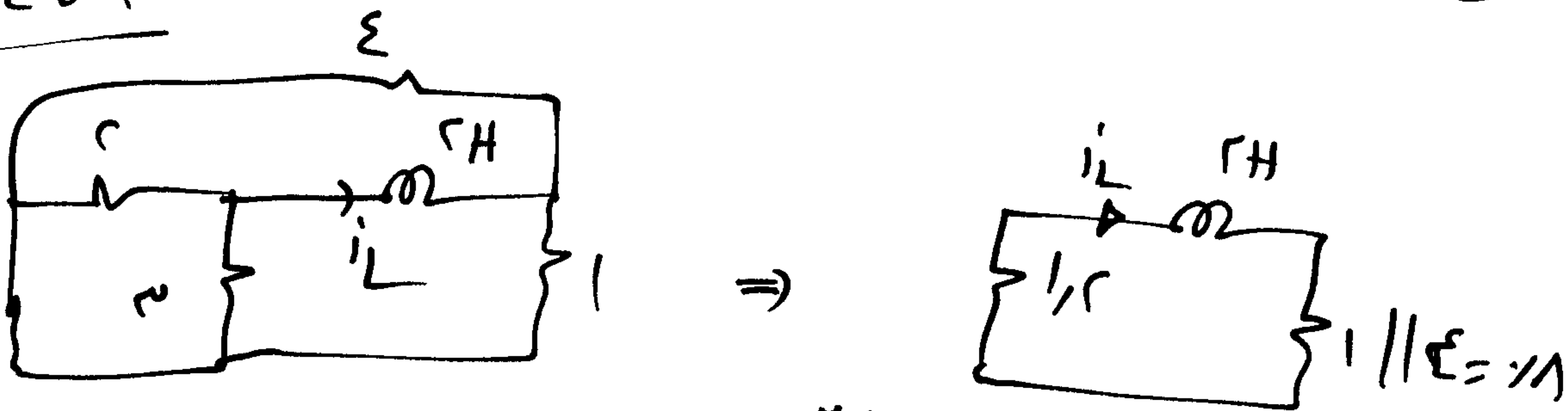
$$V_{\mu} = \frac{A+B}{C_\mu} = (A+B) \frac{2}{1r}$$

$$\begin{cases} s = V_1 + V_\mu \Rightarrow s = \frac{2A}{s} + \frac{2(A+B)}{1r} \Rightarrow 22A + 2B = V_\gamma \\ r = V_\gamma + V_\mu \Rightarrow r = \frac{2B}{\Lambda} + \frac{(A+B)2}{1r} \Rightarrow 22B + 22A = \epsilon \Lambda \end{cases}$$

$$2B = 0, \quad 2A = \epsilon \Rightarrow V_1 = \frac{2A}{s} = \frac{\epsilon \epsilon}{s} = \epsilon$$

ص - تزینہ (مجموعہ) =

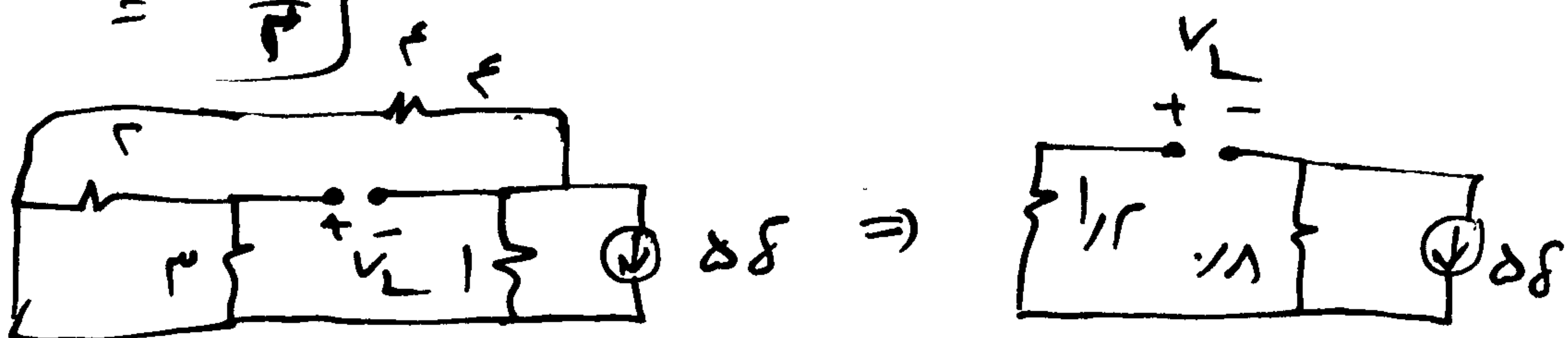
$0 < t < \ln r$



$$i_L = i_L(0) e^{-\frac{Rt}{L}} = \epsilon e^{-\frac{rt}{r}} = \epsilon e^{-t}$$

$$i_L(\ln r) = \epsilon e^{-\ln r} = \frac{\epsilon}{r}$$

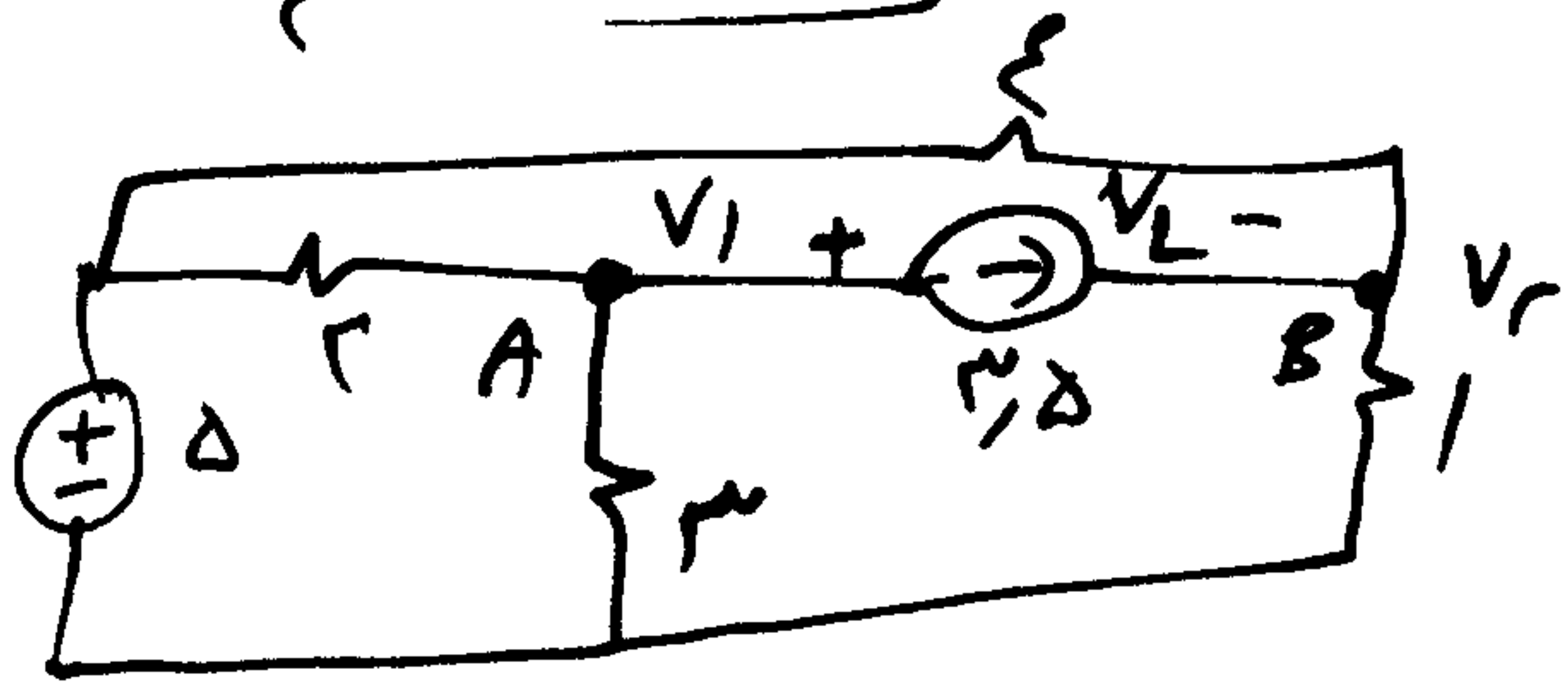
$\ln r < t < \ln r^+$



$$V_L = \gamma A (\delta \delta(t)) = \epsilon \delta(t) \Rightarrow i_L(\ln \tau^+) = i_L(\ln \tau^-) + \frac{A}{L}$$

$$i_L(\ln \tau^+) = 1/5 + \frac{\epsilon}{r} = 3/5 A$$

$t = \ln \tau^+$:

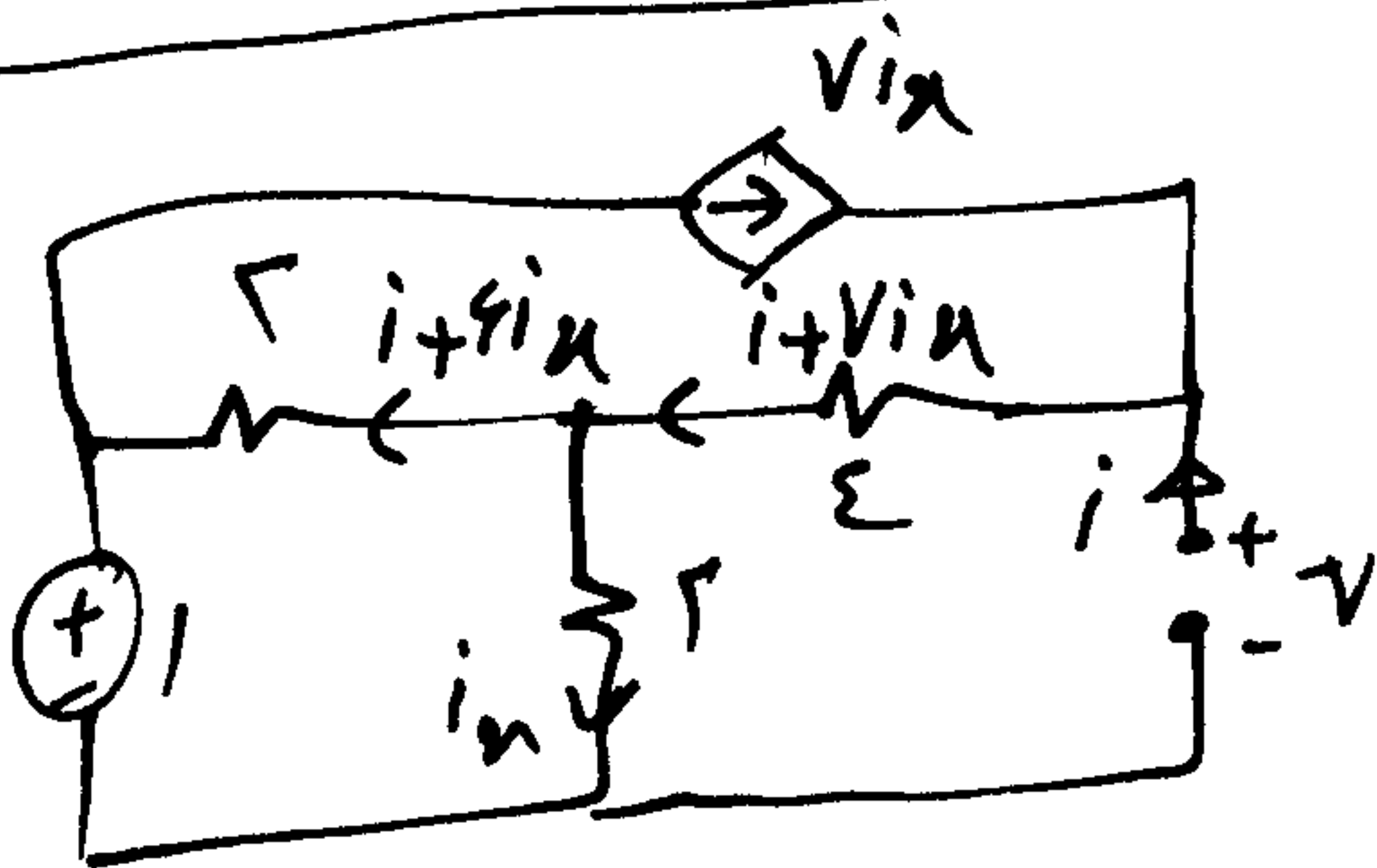


KCL^A: $\frac{\delta - V_1}{r} = \frac{V_1}{r} + 3/5 \Rightarrow (\delta - 3V_1) = rV_1 + 3/5 \Rightarrow V_1 = -1/2$

KCL^B: $3/5 + \frac{\delta - V_r}{r} = \frac{V_r}{r} \Rightarrow 1/5 + \delta - V_r = V_r \Rightarrow V_r = 3/10$

$$V_L(\ln \tau^+) = V_1 - V_r = -1/2 - 3/10 = -5/10 = -1/2$$

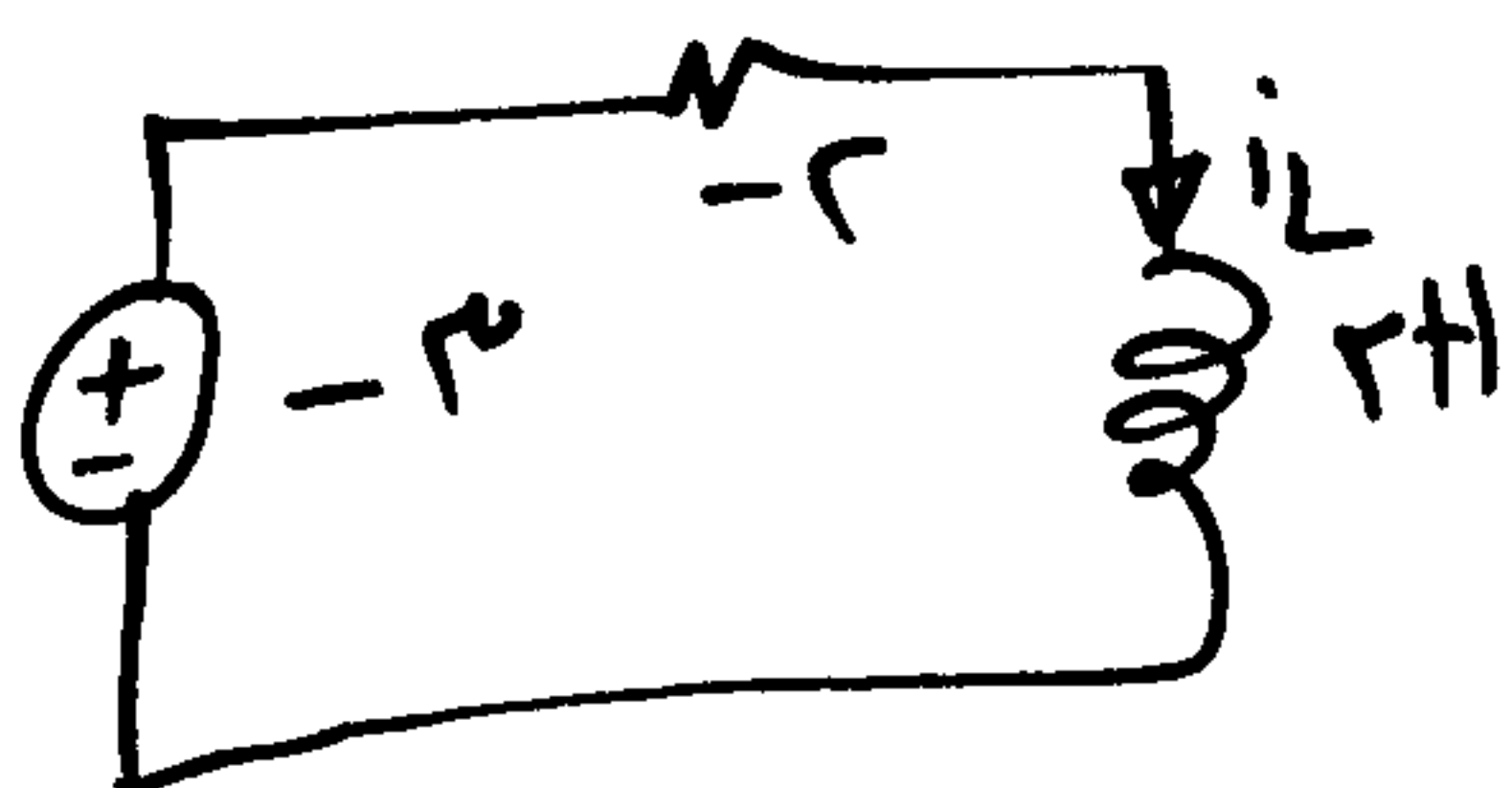
۴- ترانسفورماتور صیغ اولت.



KVL: $v = r(i + v i_n) + r i_n = 30 i_n + \epsilon i$

KVL: $r i_n = r(i + \epsilon i_n) + 1 \Rightarrow 10 i_n = -1 - r i$

$$v = 30 i_n + \epsilon i = 3(-1 - r i) + \epsilon i = -3 - r i$$



$$i_L(0) = 0/5 A$$

$$i_L(\infty) = \frac{E}{R} = \frac{-3}{-r} = 1/5 A$$

$$Z = \frac{L}{R} = \frac{r}{-r} = -1$$

$$i_L(t) = i_L(\infty) + (i_L(0) - i_L(\infty)) e^{-\frac{t}{Z}} = 1/5 - e^{-t} \Rightarrow i_L = 0 \Rightarrow 1/5 - e^{-t} = 0 \Rightarrow t = \ln(5)$$

« موفق باشید. ممنون »