

$a = \mu g = 0.1 \times 10 = 1$ $v_0 = at = 1t$ $\frac{1}{2}at^2$ (24)

$\Delta x = \frac{v_0 + v}{2} \times \Delta t \rightarrow 7.50 = \frac{0 + 1t}{2} \times t \rightarrow t = 3.7$

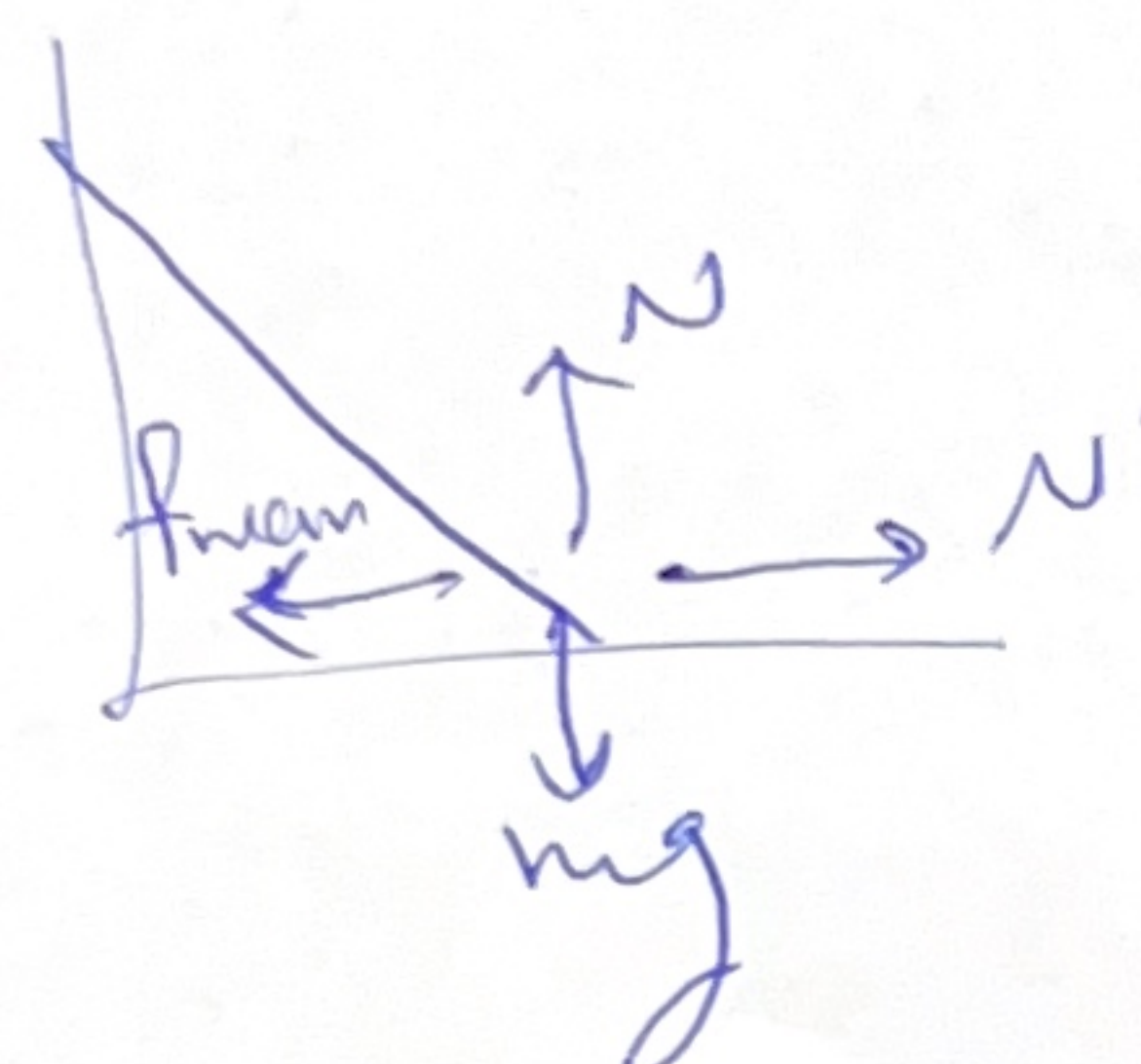
$y = \frac{1}{2}at^2 \rightarrow 17 = \frac{1}{2} \times 1 \times t^2 \rightarrow a = 10$ $\frac{1}{2}at^2$ (25)

$k\Delta L - mg = ma \rightarrow 20 \times \Delta L - 10 \times 9.8 = 10 \times a$

$\Delta L = \frac{10 \times 9.8 + 10a}{20} = \frac{0.10}{20} \text{ cm} = 10^{-2} \text{ cm} = 10^{-4} \text{ m}$

$f_{\text{man}} = N'$ $mg = N$ $R = \sqrt{f_{\text{man}}^2 + (mg)^2}$ $R > mg$

$N' = f_{\text{man}} = \mu_s \cdot mg$ $\mu_s < 1$



$v_{\text{man}} = 10 \text{ m/s}$ $A = ?$ $\frac{T}{\epsilon} = \frac{10}{1.5} \rightarrow T = 1.5$ $\frac{1}{\epsilon}$ (26)

$v_{\text{man}} = A\omega = A \times \frac{v_0}{r} \rightarrow A = \frac{v_{\text{man}} \times r}{v_0} = \frac{10 \times 1.5 \times 10^{-2}}{1 \times 1} = 0.15 \text{ cm}$

$K_{\text{man}} = \frac{1}{2} m \omega^2 A^2 = 1 \times 1 = \frac{1}{2} \times 1 \times \omega^2 \times 10^{-6}$ $\frac{1}{2} m \omega^2 A^2$ (27)

$\rightarrow \omega^2 = 0. \rightarrow a = -\omega^2 r = 0 \times \frac{r}{1.5} = 0 \text{ m/s}^2$

$v = A\omega = A(2\pi f) = \frac{1}{10} \times 10 \times 1 = \frac{10}{10}$ $\frac{1}{10}$ (28)

$\beta_1 - \beta_r = 1, \log \frac{I_1}{I_c} = 1, \log \left(\frac{v_r}{v_1} \right) = 1$ $\log \left(\frac{v_r}{v_1} \right)$ (29)

$\rightarrow \log \frac{v_r}{v_1} = 1 \rightarrow \frac{v_r}{v_1} = 10 \rightarrow v_r - v_1 = 10 = 2v_1 - v_1 = 10$

$\rightarrow v_1 = 10$

$$\lambda \propto \frac{1}{n}$$

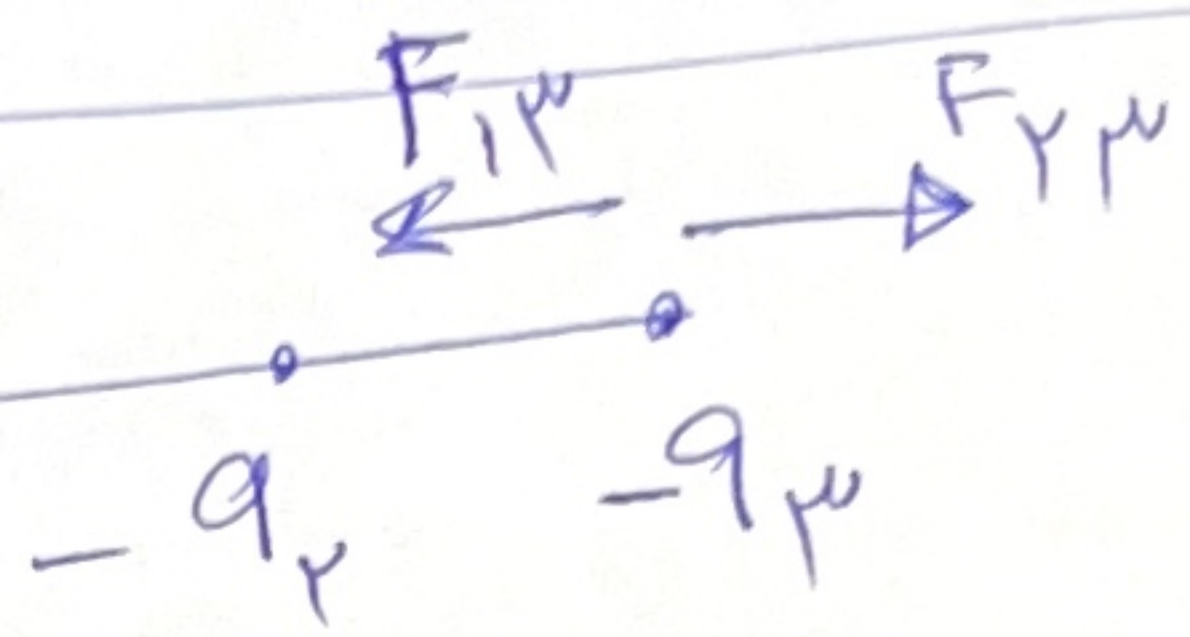
✓
نکته ۵۸

$$t \rightarrow \frac{N}{N_1} = \frac{1}{\mu} = \gamma^{\frac{1}{\mu}}$$

✓
نکته ۵۹

$$\frac{t}{\gamma} \rightarrow \frac{N}{N_1} = \gamma^{-\frac{t}{\gamma \mu}} = \left(\frac{1}{\gamma}\right)^{\frac{1}{\mu}} = \sqrt{\frac{\mu}{\gamma}}$$

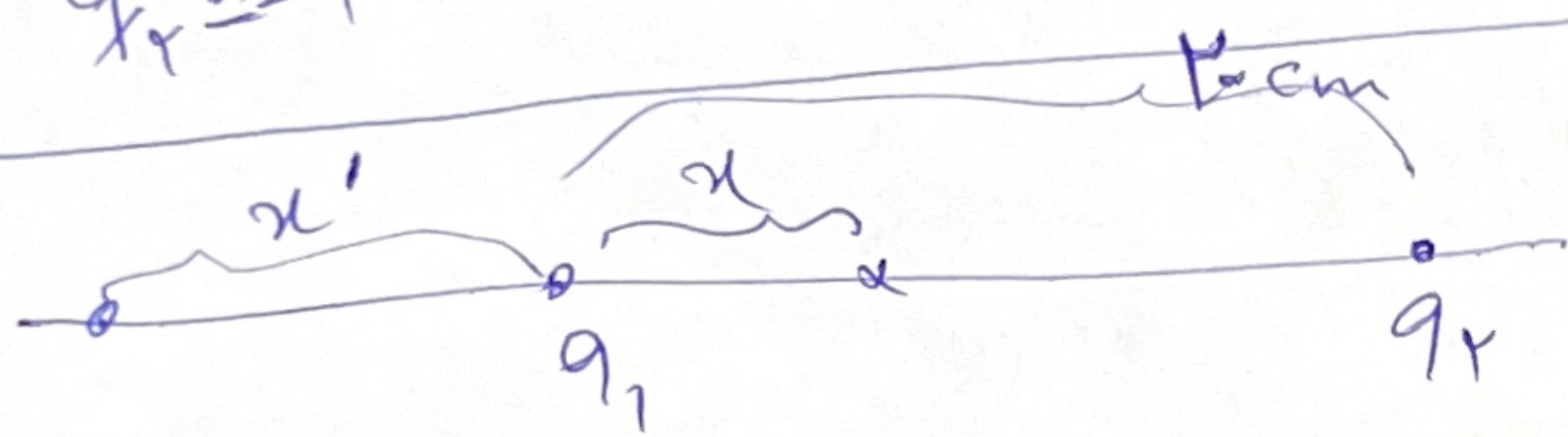
$$-\frac{q_1 q_2}{r^2} + \frac{q_1 q_2}{r^2} = \frac{q_1 q_2}{r^2} + q_1 = 1$$



نکته ۶۰

$$\rightarrow q_1 = -\gamma$$

✓
نکته ۶۱



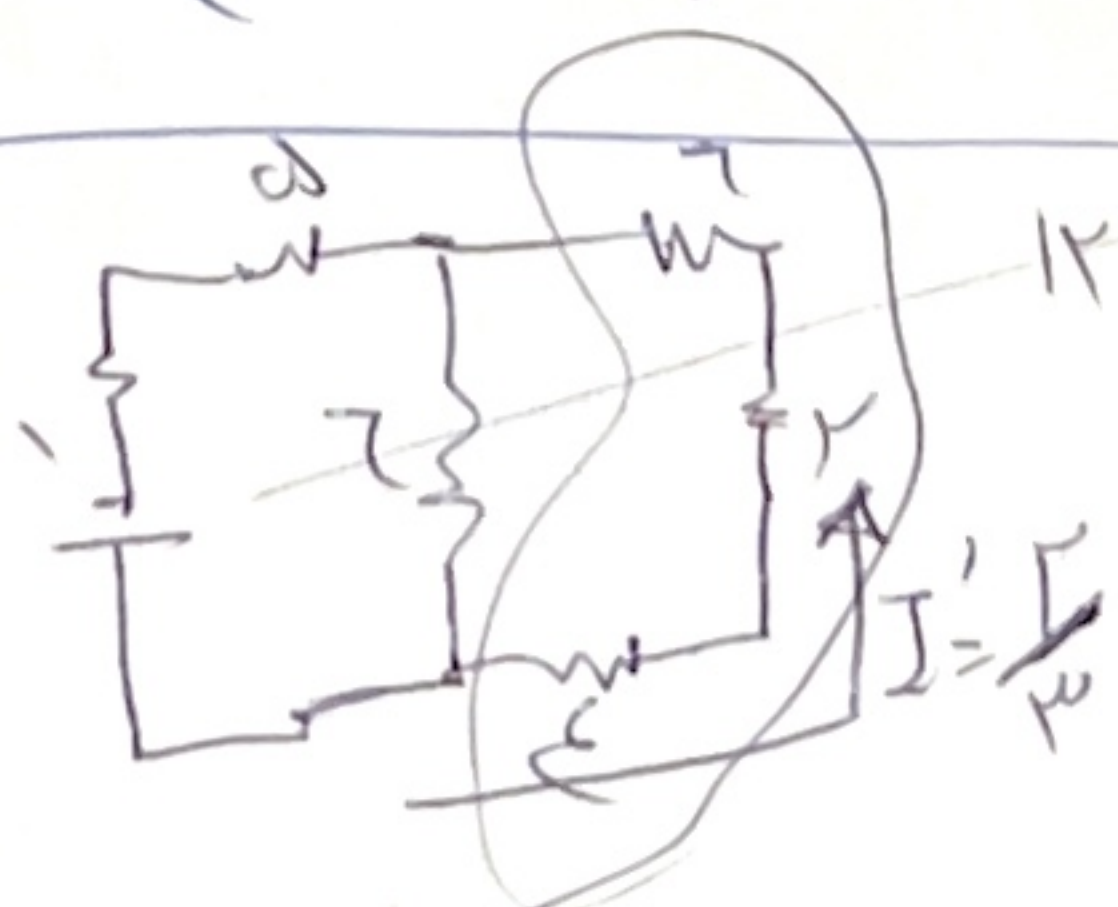
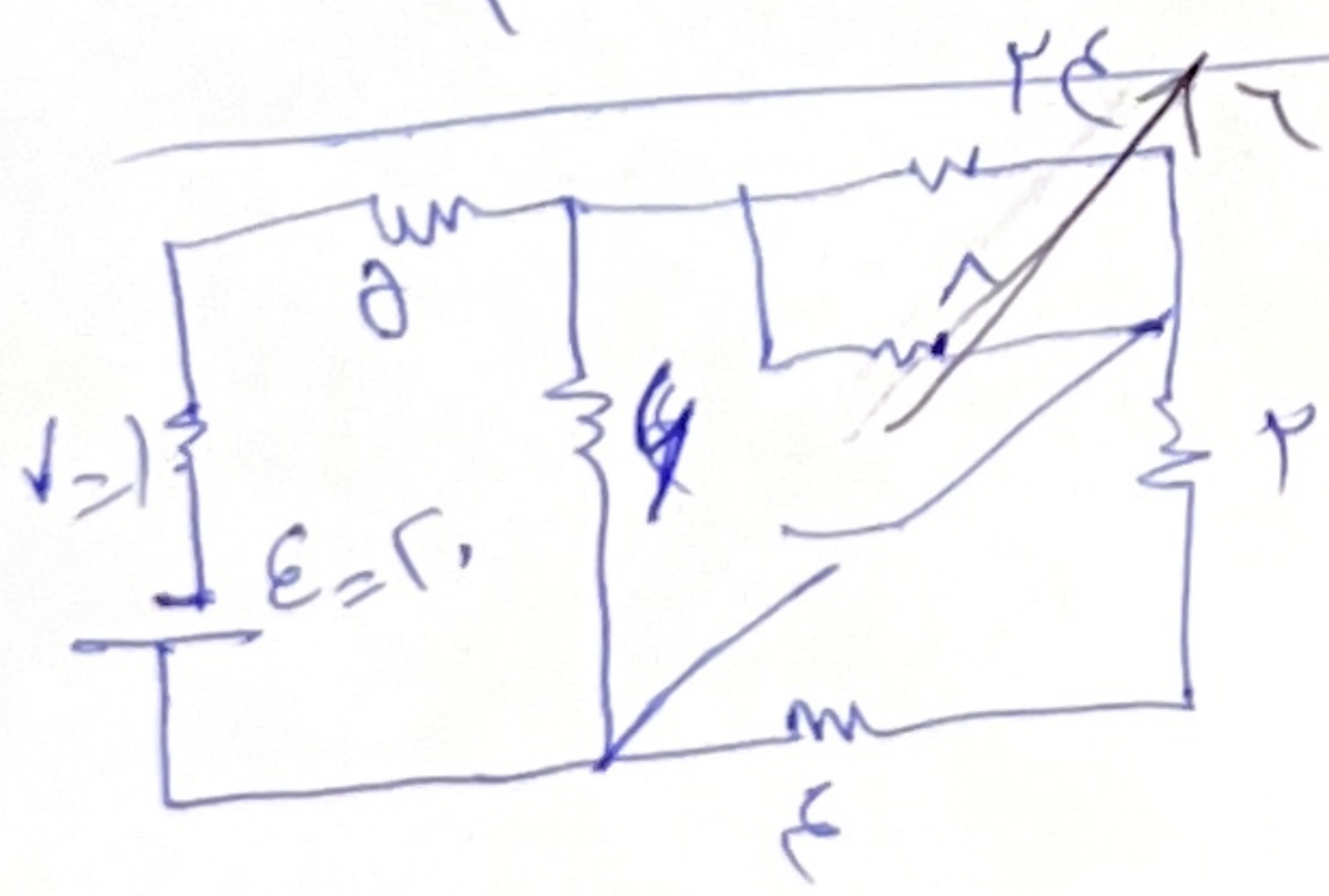
$$E_1 = \gamma E_2 \rightarrow \begin{cases} \frac{1}{x^2} = \gamma \times \frac{1}{(l-x)^2} \rightarrow x = \delta \\ \frac{1}{x'^2} = \gamma \times \frac{1}{(l+x')^2} \rightarrow x' = l \end{cases}$$

$$x + x' = \delta + l = l\delta$$

$$q_1 = \delta, C_0 = l \rightarrow V = \frac{q_0}{C_0} = \frac{\delta}{l} = \delta r$$

✓
نکته ۶۲

$$\Delta u = \frac{1}{\gamma} C V^2 - \frac{1}{\gamma} C_0 V^2 = \frac{V^2}{\gamma} (C - C_0) = \gamma V^2 C_0 = \gamma \times \gamma \delta \times l = \delta$$



$$I = \frac{E}{R} = \frac{\gamma}{l} = \gamma$$

نکته ۶۳

$$\gamma x = \gamma - x = \frac{\gamma}{\mu}$$

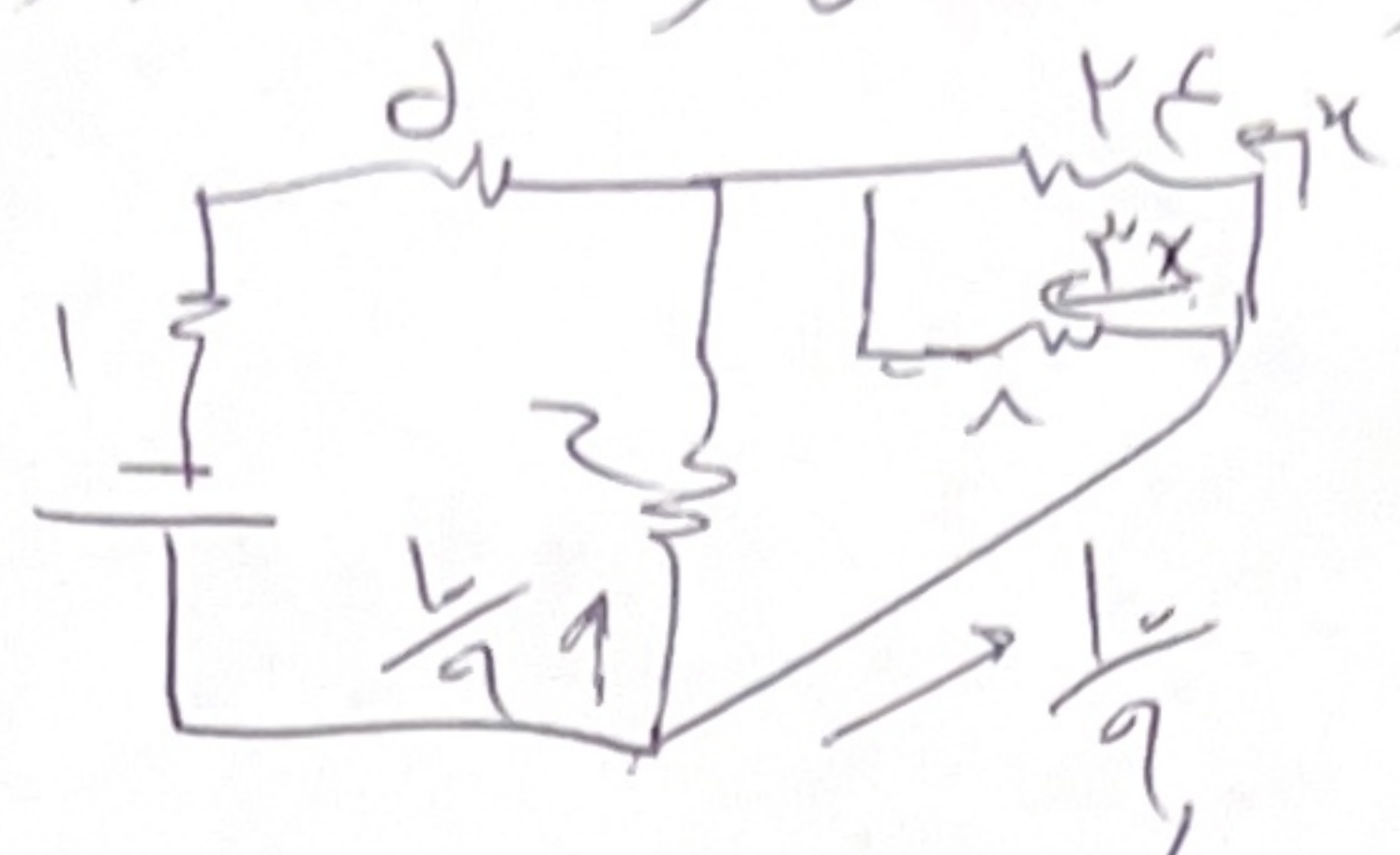


$$\gamma x' = \frac{\gamma}{\mu} \rightarrow x' = \frac{1}{\gamma}$$

$$I_1 = \gamma \times \frac{1}{\gamma} = \frac{1}{\gamma}$$

برای اتصال کلیه سورها اتصال کوتاه شود

$$I = \frac{V_0}{R} \rightarrow$$



$$R_x = \frac{1}{9} + x \frac{1}{12}$$

$$I' = I' x = \frac{10 \times 1}{12} = \frac{5}{6}$$

$$I' = \frac{5}{6} \div \frac{1}{12} = \frac{10}{2} = \frac{5}{1}$$

نیز $V' = V'' = V_0 = V_1 = V_2 = V_3$ ، $E = 1$ ، $d = 0$ ، $n = 0$ (25)

$$P_R = P_{R_1} + P_{R_2} + P_{R_3} = 2P_{R_1} + P_{R_2} = 2 \times \frac{V'^2}{R_1} + \frac{V'^2}{R_2} = \frac{V'^2}{2}$$

$$\rightarrow \frac{2 \times 10}{R_2} + \frac{10}{2} = \frac{10}{2} \rightarrow R_2 = 12, R_1 = 7$$

$$R = \rho \frac{L}{A} = \rho \frac{L}{\pi r^2} \rightarrow \frac{1}{(\pi r)^2} = \frac{1}{\pi} = \frac{8}{\pi}$$

$$\rho = \frac{m_A + m_B}{\frac{m_A}{\rho_A} + \frac{m_B}{\rho_B}} \rightarrow \frac{m_A + m_B}{\rho m_A + \rho m_B} = \frac{1}{\rho} \rightarrow \frac{m_A}{m_B} = \frac{\rho}{\rho}$$

$$\Delta P = \rho g \Delta h \rightarrow \frac{\Delta P'}{\Delta P''} = \frac{\Delta h'}{\Delta h} \rightarrow \frac{\Delta P'}{\rho} = \frac{V_0}{\rho} \rightarrow \Delta P' = 7.4$$

$$P_{gas} - P_i = \rho g h = 1000 \times 1.0 \times 21 = 13200 \times 1.0 \times h$$

$$\rightarrow h = 20 \text{ cm Hg}$$

$$\eta_t = \frac{10}{1.0} \times \frac{2.0}{1.0} = \frac{10}{1.0}$$

$$Q = mL_P \rightarrow \frac{L_{FA}}{L_{FB}} = \frac{Q_A}{Q_B} \times \frac{m_B}{m_A} = \frac{d_0}{10.0} \times \frac{10}{15} = 1.0$$

گزینه ۲۱

$$Q_{cal} \rightarrow Q_e = \frac{m_1 C_1 \theta_1 + m_2 C_2 \theta_2}{m_1 C_1 + m_2 C_2}$$

گزینه ۲۱

$$Q_e = \frac{100 \times 1.1 \times 10 + 100 \times 1.0 \times 20}{100 \times 1.1 + 100 \times 1.0} = 15$$

$$\mathcal{E} = RI = R I_{max} \sin \frac{2\pi}{T} t$$

گزینه ۲۲

$$\mathcal{E} = \mathcal{F} \times \mathcal{F} \times \sin \frac{2\pi}{T} \times \frac{0}{2} = 1$$

$$\mathcal{E} = \mathcal{F} \times \mathcal{F} \times \sin \frac{2\pi}{T} \times \frac{0}{2} = 1$$

گزینه ۲۳

$$B = \mu_0 \frac{NI}{L} \rightarrow 1.1 \times 10^{-4} = 1.2 \times 10^{-4} \times \frac{N}{1.0} \times 1.0 \rightarrow N = 0.9$$

گزینه ۲۴

گزینه ۲۵