

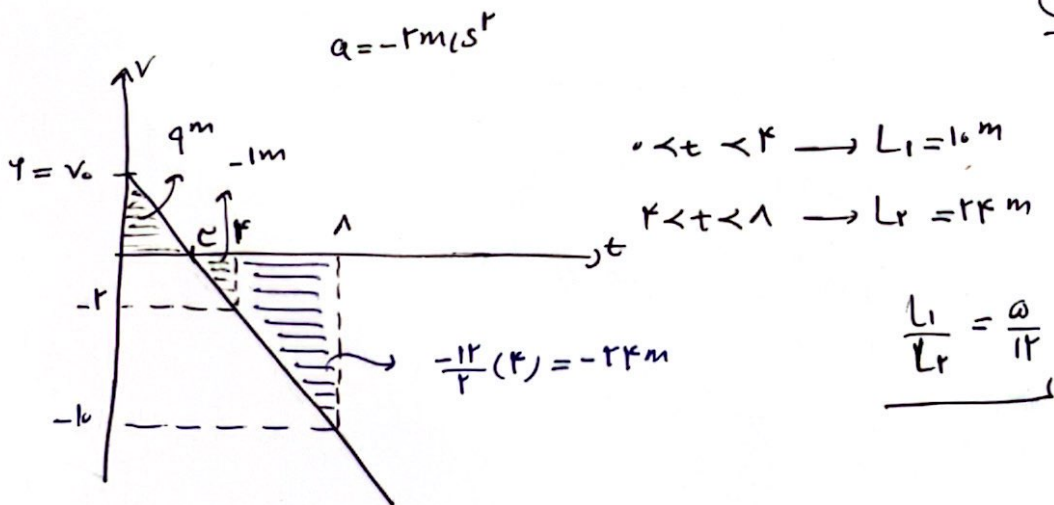
(P) (۴۴)

$$v = \frac{\Delta x}{\Delta t} = \frac{24-1}{1-4} = \frac{13}{-3} = -\frac{13}{3} \text{ m/s}$$

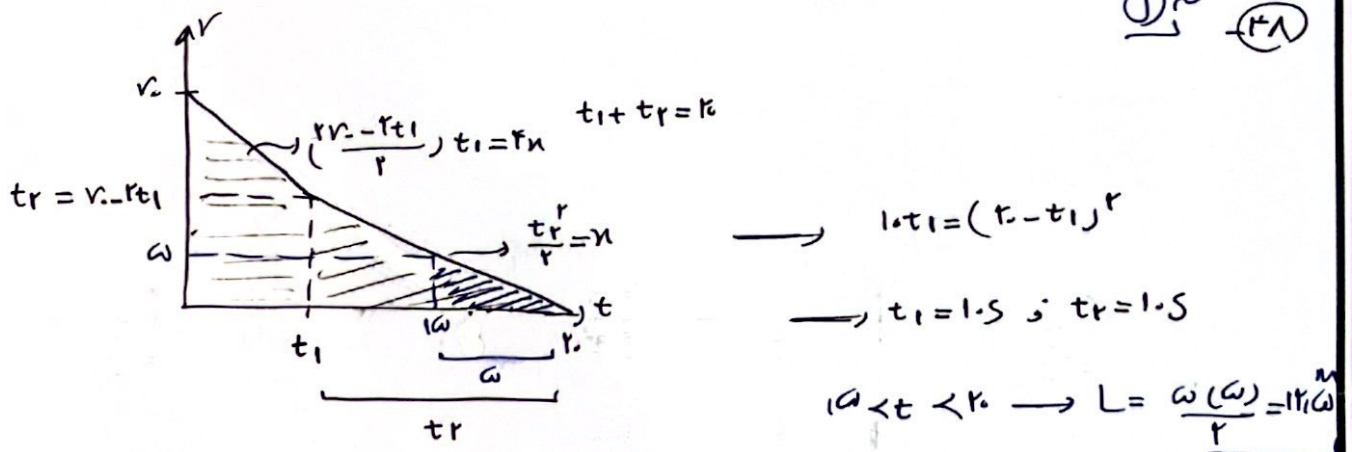
$$x = vt + x_0 \quad \begin{matrix} t_1 = 2.5 \\ x_1 = 1 \end{matrix} \rightarrow 1 = 12 + x_0 \rightarrow x_0 = -11 \text{ m}$$

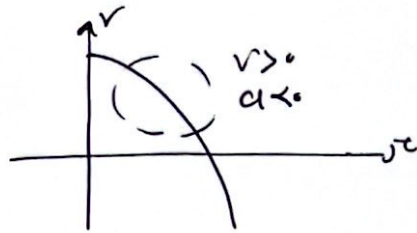
$$\rightarrow x = -\frac{13}{3}t - 11$$

(K) (۴۵)

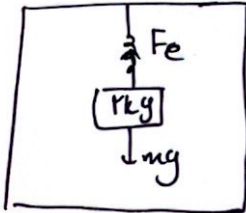


(J) (۴۸)





۴۹
⊙

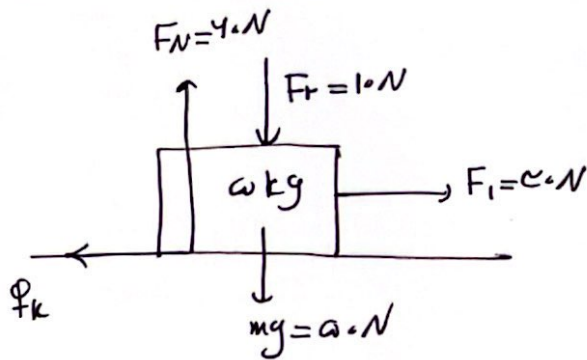


$$F_e = k \Delta x = m(g - |a|)$$

$$\frac{1}{2} k \Delta x = \frac{1}{2} (k) \Delta x \rightarrow \Delta x = 4 \text{ cm}$$

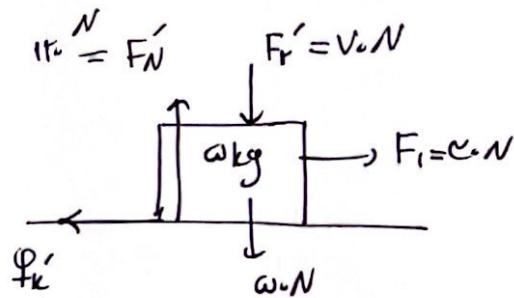
$$\rightarrow x_f = 4 \text{ cm}$$

⊙ - ۵۰



$$F_i - f_k = ma \rightarrow 20 - f_k = 10$$

$$\frac{r}{f_k} = \frac{4}{F_N} \rightarrow f_k = \frac{1}{2} F_N$$



$$20 - f_k' = 5(-2) = -10 \rightarrow f_k' = 30 \text{ N}$$

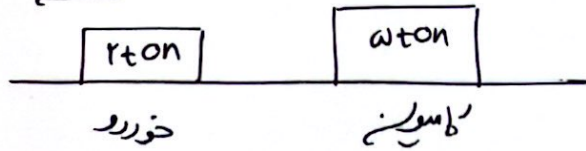
$$f_k = \frac{1}{2} F_N' \rightarrow F_N' = 12 \text{ N}$$

$$F_r' = 6 \text{ N} \rightarrow \Delta F_r = 4 \text{ N}$$

⊙ - ۵۱

۵۲ - ۲

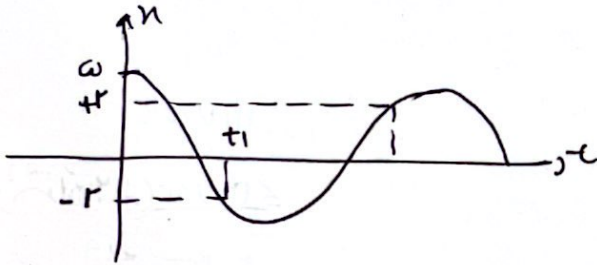
$$v_f = -\frac{1.0 \text{ m}}{s} \rightarrow v_i = \frac{4.0 \text{ m}}{s}$$



$$F_{net \text{ av}} = \frac{\Delta P}{\Delta t} = \frac{m \Delta v}{\Delta t}$$

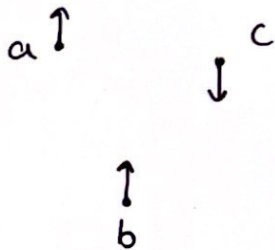
$$F_{net \text{ av}} = \frac{(4)(-60)}{\frac{1}{2}} = -480 \text{ N}$$

۵۳ - ۲



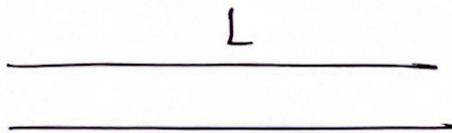
$$\Delta t = \frac{T}{2}$$

۵۴ - ۱



شد زا a و b با هم برابر.

۵۵ - ۲



$$\Delta x = \frac{v_{\text{هوای}} v_{\text{ظرف}}}{v_{\text{هوای}} - v_{\text{ظرف}}} \Delta t \rightarrow \Delta t = \frac{v_i - v_f}{v_i v_f} L$$

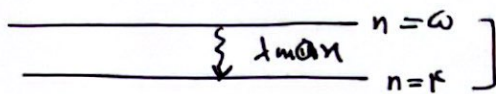
۵۶ - ۲

$$\lambda = \frac{v}{f} \rightarrow \frac{9}{f} \times 10^{-4} = \frac{v}{\omega \times 1.14}$$

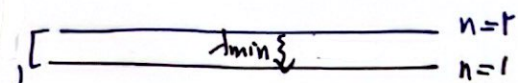
$$\rightarrow v = \frac{9}{f} \times 10^{-4} \frac{m}{s} \quad \left. \begin{array}{l} v = \frac{c}{n} \\ n = \frac{f}{\omega} \end{array} \right\}$$

(۳۷) -

(۳۸) -



$$h f_1 = -13.6 eV - (-13.6 eV) = 13.6 eV$$



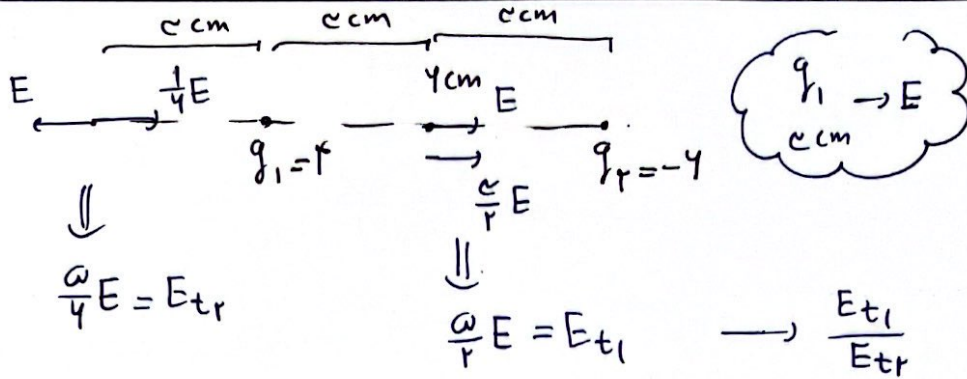
$$h f_2 - h f_1 = 3.4 eV - 13.6 eV = -10.2 eV$$

$$h f_2 = 10.2 eV$$

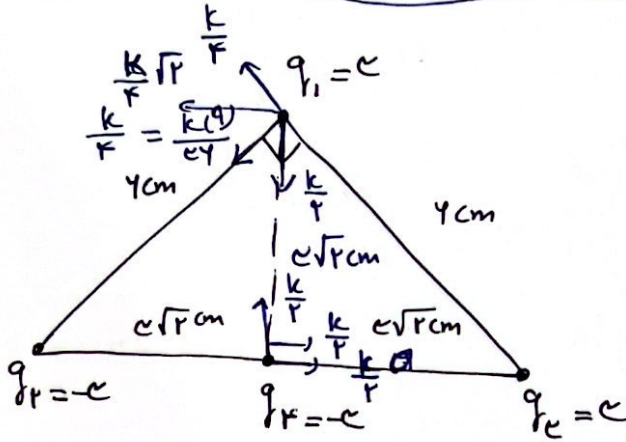
(۳۹) -

$$\frac{1}{\lambda} = R \left(\frac{1}{n_1 r} - \frac{1}{n_2 r} \right) \rightarrow \frac{f_0}{c \lambda} = \frac{1}{n_1 r} - \frac{1}{(n_1 + r) r}$$

$$\rightarrow \underline{n_1 = \infty} \quad ; \quad \underline{n_2 = V}$$



۴۱



$$F_{it} = \frac{\sqrt{4}}{r} k$$

$$F_{rt} = \sqrt{10} \frac{k}{r}$$

$$\frac{F_{it}}{F_{rt}} = \frac{\sqrt{2}}{10}$$

۴۲

تجزیه

ک

۴۳

$$\frac{C_r}{C_i} = \frac{r}{c} \rightarrow C_r = \frac{1}{c} \omega F$$

$$\frac{u_{r2}}{u_i} = \frac{c}{r} \rightarrow \Delta u = \frac{1}{r} u_i = \frac{1}{r} \left(\frac{1}{c} \right) \frac{(\omega F)^2}{\omega} = 2000 \text{ J} = 2 \text{ mJ}$$

$$P = VI = 2200 \text{ W} = 2.2 \text{ kW}$$

۴۴

$$u = P \cdot t = (2.2) (\omega) (c)$$

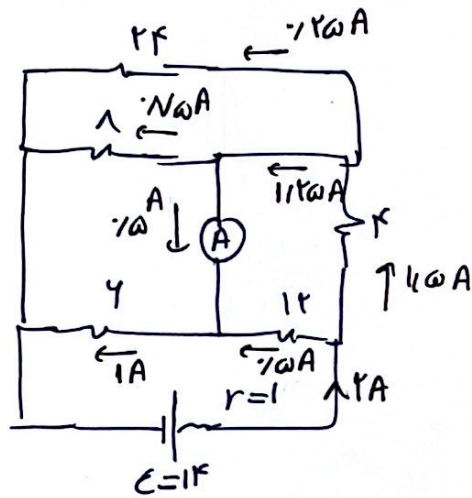
$$x = c = 11 (c) (\omega) = 14 \omega \dots$$

تغییر مکان

$$P = \frac{V^2}{R} \rightarrow P_1 = \frac{(\frac{\epsilon}{r})^2}{R} = \frac{\epsilon^2}{rR} = P_r \rightarrow P_1 + P_r = \frac{\epsilon^2}{rR}$$

(40) (41)

$$P_c = P_f = \frac{\epsilon^2}{R} \rightarrow P_c + P_f = \frac{2\epsilon^2}{R}$$



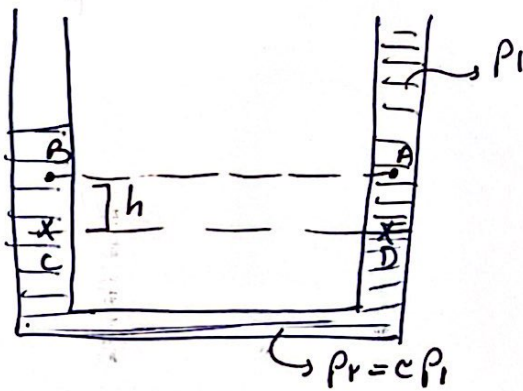
$$R_{eq} = 4\Omega$$

$$I = \frac{\epsilon}{R_{eq} + r} = 2A$$

(42) (43)

$$\Phi = BA \cos\theta \rightarrow \Phi = (4 \times 10^{-2}) (9 \times 10^{-2}) (1) = 3.6 \times 10^{-3} \text{ wb} = 3.6 \times 10^{-3} \text{ wb}$$

(44) (45)



$$P_C = P_D \rightarrow P_r g h + P_B = P_i g h + P_A$$

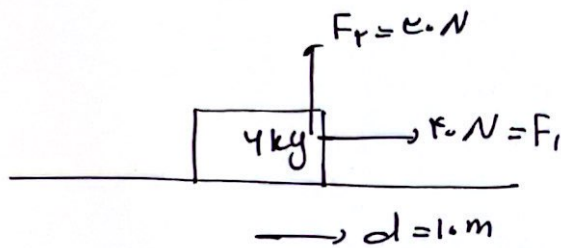
$$P_A - P_B = (P_r - P_i) g h = r\rho g h$$

(46) (47)

$$\frac{v_r}{v_i} = \frac{\omega}{f} \rightarrow \frac{k_r}{k_i} = \frac{m_r}{m_i} \times \left(\frac{v_r}{v_i}\right)^2$$

$$\rightarrow r = \frac{m_r}{m_i} \times \frac{r\omega}{f} \rightarrow \frac{m_r}{m_i} = \frac{14}{r\omega} = \frac{4f}{1.00}$$

(۴۴)



$$W_{F_r} = 0$$

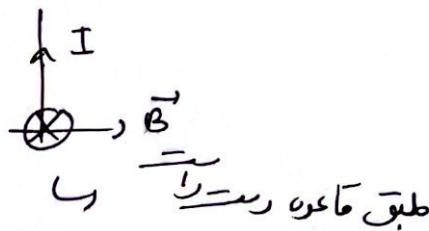
$$W_{F_i} = W_F = f \cdot d \text{ J}$$

(۷۰)

$$\Phi = B A \cos \theta \rightarrow [\Phi] = [B] [A] \quad \textcircled{I}$$

$$F = B I L \sin \theta \rightarrow [B] = \frac{[F]}{[I][L]} = \frac{\text{kg} \cdot \frac{\text{m}}{\text{s}^2}}{\text{A} \cdot \text{m}} = \frac{\text{kg}}{\text{A} \cdot \text{s}^2} \quad \textcircled{II}$$

$$\textcircled{I}, \textcircled{II} \quad [\Phi] = \frac{\text{kg} \cdot \text{m}^2}{\text{A} \cdot \text{s}^2} = \omega b$$



(۷۲)

(۷۵)

دانش آموز عزیز - دست راست

$$B = \frac{\mu_0 NI}{L} = \frac{(2 \times 10^{-7}) (\omega \times 10^2) (4 \times 10^{-1})}{10^{-1}} = 24 \times 10^{-4} T = 24 G$$

(۷۴) ✓
⊙ ~

$$Q = m c \Delta \theta + m L_f + m c \Delta \theta$$

(۷۵) ✓ ⊙ ~

$$\frac{c}{T} = c$$

$$m_{\text{زنج}} = m$$

$$= m \left(\frac{1}{T} c \right) (10) + m (100) + m c (10) = 100 m c$$

$$\frac{m'}{T} = m'$$

$$Q = m' c (\Delta \theta) = \frac{1}{2} m c \Delta \theta \rightarrow m' = 2m$$