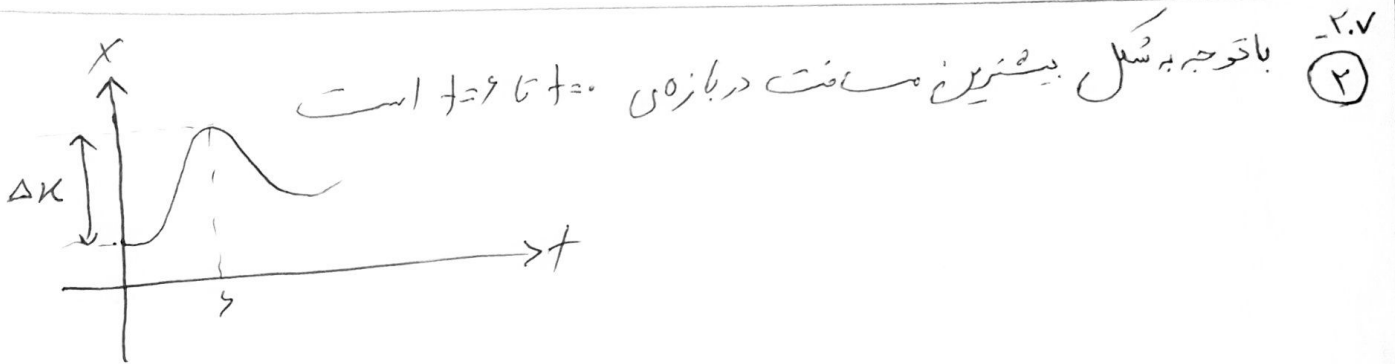


$A + 8 + 8 + 8 = 237$

$A = 225$ و $Z = 88 \rightarrow N = 137$



(۴) - ۲۰۸ شیب خط واصل $t=0$ تا $t=t_1$ اندازه بیشتری دارد

$\bar{a}_1 = \frac{\Delta v}{\Delta t} = \frac{v_r - v_1}{t_r - t_1} = \frac{\Delta v}{\delta} = -f \rightarrow \Delta v_1 = -f \delta$ (۲) - ۲۰۹

$\bar{a}_r = \frac{v_e - v_r}{\Delta t} = \frac{\Delta v}{\gamma} = f \rightarrow \Delta v_r = f \delta$ $\frac{\Delta v_1 + \Delta v_r}{12 - \delta} = \frac{-19}{v} i$

$v_A = 2v_B$ $\frac{x_{0A}}{\delta} = -f \left(\frac{x_{0B}}{2 \cdot 1.2} \right) \rightarrow \begin{cases} x_{0B} = -2x_{0A} \\ x_{0A} + x_{0B} = 15 \end{cases} \rightarrow \begin{cases} -2x_{0A} = 15 \\ x_{0A} = -7.5 \text{ m} \\ x_{0B} = 1.0 \text{ m} \end{cases}$ (۳) - ۲۱۰

$x_A = \delta t + \dots - \delta$
 $x_B = -1.0 t + \dots + 1.0$
 $x_A - x_B = +15 t + 15$
 $t = 2 \rightarrow x_A - x_B = 15$

$$\vec{F}_{net} = m\vec{a} \quad \vec{v} = a\vec{t} + \vec{v}_0 \rightarrow a = \frac{v}{t} = \frac{m}{s \cdot r}$$

-۲۱۱
②

$$F - f_k = \frac{v}{t} \times \frac{m}{s \cdot r} = 2V$$

$$\rightarrow f_k = 15V - 2V = 13N$$

$$R = \sqrt{13^2 + 2^2} = 13.2N$$

$$\vec{F}_{net} = m\vec{a}$$

$$-F_e - mg = ma$$

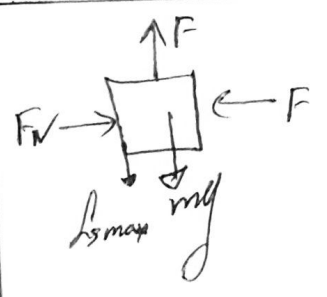


$$F_e = mg \rightarrow k \Delta x = mg$$

$$m = \frac{k \Delta x}{g} = \frac{2 \times 10}{1 \times 10} = 2kg$$

-۲۱۲
①

$$a = \frac{-F_e - mg}{m} = \frac{20 - 20}{2} = -\frac{10}{2} j$$



$$L_{smax} + mg = F \rightarrow \frac{1}{2} \times F + 9 = F \rightarrow F = 18N$$

$$R = \sqrt{18^2 + 9^2}$$

$$R' = \sqrt{L_{smax}^2 + 9^2} = \sqrt{9^2 + 9^2}$$

$$\frac{R'}{R} = \frac{\sqrt{2}}{2}$$

$$L_{smax} = 9 \times \frac{1}{2} = 4.5$$

در حالت دوم جهت ایستایی برقرار است.

-۲۱۳
②

$$\frac{v \cdot \lambda}{2 \cdot \epsilon} = \epsilon_0 \cdot \lambda \cdot 10^9 m \quad \lambda = 2 \cdot 10^9 m = 2 \times 10^9 m$$

$$c = \lambda \cdot f \rightarrow f = \frac{c \times 10^9}{2 \times 10^9} = 1.10$$

$$\rightarrow T = 1.10$$

④ - ۲۱۵

$$\vec{F} = 2s \rightarrow \vec{T} = \epsilon s$$

$$E = \frac{1}{2} m \times \left(\frac{A \cdot r \cdot \kappa}{r} \right)^2 = \frac{\epsilon}{1000} j = 1/5 m j$$

④ - ۲۱۸

$$\frac{\Delta \lambda}{\lambda} = 1.0 \text{ cm}$$

$$S = \frac{L}{T} \rightarrow L = \frac{S}{\epsilon} = \frac{S}{T}$$

$$\lambda = \lambda \text{ cm} \quad r = \lambda \cdot L \quad L = \frac{S \times 10^6}{\lambda} = \delta \rightarrow T = \frac{1}{S}$$

$$T = \frac{f}{n} \rightarrow n = \frac{\frac{1}{\epsilon}}{\frac{1}{\delta}} = 12.5$$

$$L = n(\epsilon A) \Rightarrow A = \frac{L}{\epsilon n} = \frac{1.5}{\epsilon \times 12.5} = \frac{3}{100} \text{ m}$$

$$A = 3 \text{ cm}$$

با افتاب $\alpha = \delta$ یعنی زاویه تابش مساوی زاویه بازتاب

$$E = \frac{ER}{1} \left(\frac{1}{n^2} - \frac{1}{n^2} \right)$$

$$h \cdot f = ER \left(\frac{1}{\epsilon^2} - \frac{1}{\delta^2} \right) \rightarrow f = \nu \epsilon \delta T \text{ Hz}$$

$$n=1 \quad \frac{1}{\lambda} = R \left(\frac{1}{n^2} - \frac{1}{n^2} \right)$$

$$\frac{f}{c} = R \left(\frac{1}{1} - \frac{1}{n^2} \right) \rightarrow n=3$$



$$E_r + E_\theta = E' \quad E_1 = \frac{q \times 10^{-9} \times 1 \times 10^{-3}}{4\pi \epsilon_0 r^2} = 4 \dots$$

-228
⑤

$$E'^r + E_1^r = (V_1 \delta x_1)^r$$

$$(4 \dots)^r + E'^r = (V_1 \delta x_1)^r \rightarrow q_r = \Lambda \mu c$$

$$r = \sqrt{r^2 + \Lambda l} = \sqrt{a} \quad F_{K1} = \frac{k \times \Lambda \times 10^{-5} \times q \times 10^{-7}}{r^2} = 9,9 \times 10^{-7} N$$

$$C_r - C_1 = k \epsilon_0 \left(\frac{A}{d_r} - \frac{A}{d_1} \right)$$

-228
①

$$C_r - C_1 = \Lambda, \Lambda \delta x_1^{-1r} \times \epsilon \left(\frac{r \times 10^{-7}}{\delta x_1^{-c}} - \frac{r \times 10^{-7}}{\delta x_1^{-c}} \right) = V_1 r \epsilon \rho F$$

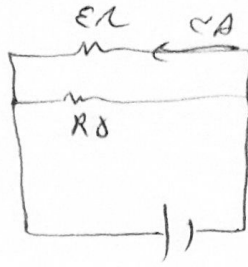
-228
⑤

$$\cancel{V} = \epsilon - \rho V \quad \epsilon = I V$$

-228
⑤

۲۲۶ - ۳

با انتخاب $R=3$



$$R_{eq1} = r + r = 2r$$

اگر جریان ورودی $I_1 = 1A$ و خروجی $I_0 = 1A$ ←

$$I_1 = R_0 \times I_0$$

$$\frac{1}{r} P_0 = P_r \rightarrow \frac{1}{r} \frac{(I_0)^2}{R_0} = I_1^2 \rightarrow R_0 = 4r$$

$$\frac{R_{eq}}{R} = \frac{r}{3}$$

$$\frac{1}{R_{eq1}} = \frac{1}{1r} + \frac{1}{5} = \frac{6}{5r}$$

۲۲۷ - ۳

$$R_{eq1} = \frac{5r}{6} = \mathcal{E}/\delta$$

$$I = \frac{12}{9,5 + 1,5} = 1,2$$

~~$R_{eq1} = \mathcal{E}/\delta$~~ $R_{eqr} = \mathcal{E}r$
 $R_{eq} = 9,5r$

$$I_1 = \frac{1,2}{\mathcal{E}} \times r = 1/9$$

$$F_B = |q| B v \sin \theta$$

$$F_B = 2 \times 10^{-9} \times \frac{1}{1} \times 2 \times 10^{-8} = 4 \times 10^{-17}$$

$$F_E = E \cdot |q| = 8 \times 10^4 \times 2 \times 10^{-9} = 1,6 \times 10^{-4}$$

$$\Sigma F = 2 \times 10^{-4}$$



۲۲۸ - ۳

$$\mathcal{E} = -N \frac{\Delta \phi}{\Delta t} = 2 \cdot v \omega L t$$

۲۲۹ - ۳

$$\eta = \frac{\frac{1}{2} m v^2}{\dots} = \frac{\frac{1}{2} \times 8 \times 10^{-4} \times 4 \mathcal{E}}{\dots} = 1 \%$$

۲۳۰ - ۳

$$\frac{P_r}{P_i} = \frac{r}{r} \quad \frac{P_0 + \rho g x / \delta r}{P_0 + \rho g x \cdot 1} = \frac{r}{r}$$

-۲۳۱
(۲)

$$\rightarrow \rho = 13, \delta \frac{gr}{cm^2}$$

$$\rho g + (\rho g h)_{Hy} = \rho g h + P_0$$

-۲۳۲
(۲)

$$\rightarrow \rho = 2 \dots \frac{kg}{m^3}$$

-۲۳۳

(۱)

$$\frac{m L h}{m L h + \rho L \Delta \theta} \times 100 = \frac{225 \dots \phi}{225 \dots + 25 \dots (2)} \times 100 = 20 \%$$

-۲۳۴

(۲)

-۲۳۵

$$\frac{(\frac{Q}{t})_A}{(\frac{Q}{t})_B} = \frac{k \times A_A \times \Delta \theta_A \times L_B}{k \times A_B \times \Delta \theta_B \times L_A} = \frac{15}{9}$$

$$m_A = m_B \rightarrow A_A L_A = A_B L_B$$