

پاسخ شعر دریں فنریب للور نمبریں نوبت اول

۱۴.۴، ۲، ۱۲

۲۴۲
۹۴ $PV \rightarrow \frac{4}{2} \alpha + \frac{24}{92}$ عددی

۲ (۴۶)

ن
سریں حسرت
و
۲۴۲
۹۴

$B = 2 \times 10^{-7} \frac{I}{d}$

۲ (۴۷)

باقرائیں حاملہ ازیم صیال (حفظ صیال) صلیف نمبر

۴ (۴۸)

$F = lIB \sin \alpha$

$N = m \cdot A \cdot B \rightarrow \frac{kg \cdot m}{s^2} = m \cdot \frac{C}{s} \cdot B \rightarrow B = \frac{kg}{Cs}$

ن
م
س
ق
س

۲ (۴۹)

$x = t^2 - 12t + 2$

$v = 2t - 12 \rightarrow t = 6s$

در لحظه $t = 6s$ متحرک شریعتی دور

۴ (۵۰)

t	0	4	10
x	20	-12	0

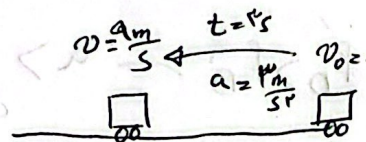
$22m + 12m = 34m$ فاصلہ طے کردہ

۲ (۵۱)

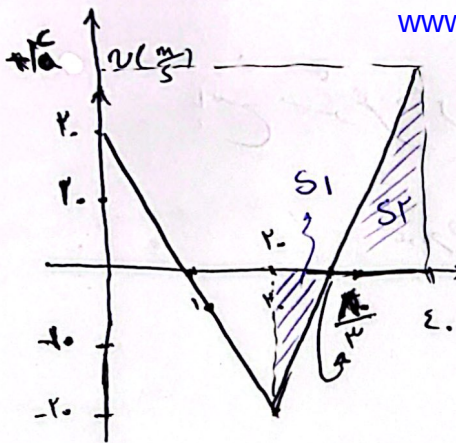
① $v^2 - v_0^2 = 2a \Delta x \Rightarrow$

② $v = at + v_0$

$v = 4 \times 2 + 0 = 8 \frac{m}{s}$



① $21 - 0 = 2(4) \Delta x \rightarrow \Delta x = 13.5m$



$$v_0 = 4 \cdot \frac{m}{s}$$

۲ (در)

① در $v_0 = 4$

$$v = at + v_0$$

$$v = -4t + 4$$

$$t = 1.5 \sim v = 0$$

$$t = 2.5 \sim v = -4 \cdot \frac{m}{s}$$

② در $v_0 = -4$

$$v = at + v_0$$

$$v = 4t - 4$$

در $t = \frac{4}{4} + 1 = 2 \cdot \frac{m}{s} \sim v = 0$

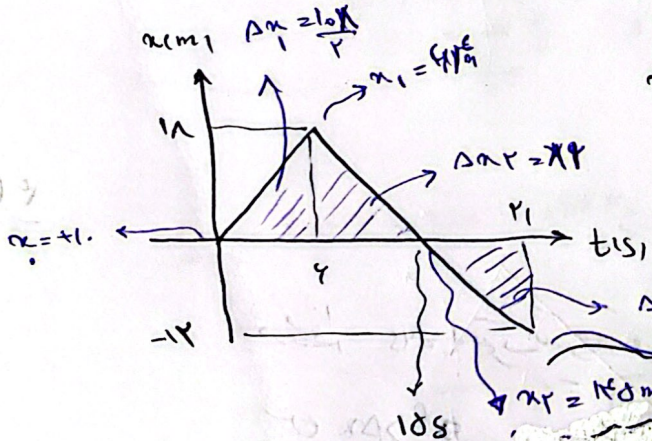
در $t = 4.5 \sim v = 16 \cdot \frac{m}{s}$

$$l = S_1 + S_2$$

$$S_1 = \frac{1}{2} \times (2 - 1) \times 4 = 2$$

$$S_2 = \frac{1}{2} \times (4 - 2) \times 4 = 4$$

$$l = 2 + 4 = 6$$



$$x_0 = 10 \text{ m}$$

۲ (در)

$$x_1 = 4 \cdot 1 + 10 = 14 \text{ m}$$

$$\Delta x_1 = 14 - 10 = 4 \text{ m}$$

$$x_2 = 12 - 4 = 8 \text{ m}$$

$$\Delta x_2 = 8 - 4 = 4 \text{ m}$$

$$14 - 8 = 6$$

$$t_1 = 1 \rightarrow t = 2$$

$$t = 10 \pm 2$$

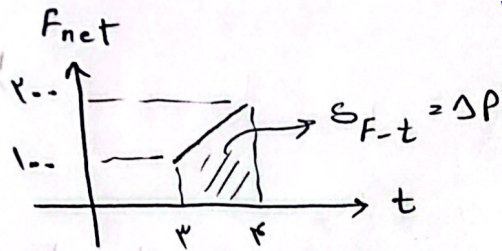
$$t = 12$$

$$t = 8$$

۱ (در)

$$f_0 > f_0 \rightarrow a > a > g$$

لین حسی



$$\Delta p = m \Delta v = 10 \cdot 10 = 100 \text{ kg m/s}$$

$$r(\omega)$$

$$\Delta v = \frac{r_m}{s} \rightarrow v = \dots$$

$$v_r = \frac{r_m}{s}$$

$$\Delta x = \bar{v} \Delta t = \frac{v + 0}{2} \times 1 = 10 \text{ m}$$

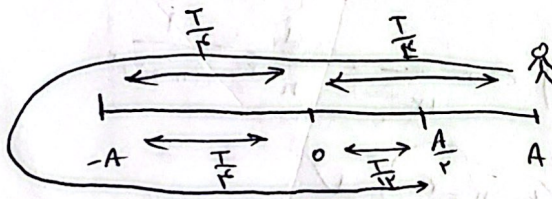
$$F = ma = \frac{G m m}{r^2} = \frac{4.4 \times 10^{-11} \times 0.91 \times 10^{-3} \times 0.91 \times 10^{-3}}{(9 \times 10^{-9})^2} = 9.1 \text{ N}$$

$$f_{cm} = \frac{v}{\lambda} = \frac{v}{\lambda} \rightarrow \frac{v}{\lambda} = \frac{1}{T} \rightarrow T = \frac{1}{f} \text{ s} \rightarrow f = \dots$$

$$1(\omega)$$

$$\lambda = 10 \rightarrow \lambda = 10 \text{ m}$$

$$\lambda = \frac{v}{f} \rightarrow v = 10 \text{ m/s}$$



$$\frac{v}{\lambda} + \frac{v}{\lambda} = \frac{1}{T}$$

$$r(\omega)$$

$$\frac{10}{10} = \frac{1}{T} \rightarrow \frac{1}{T} = 1 \text{ s}^{-1}$$

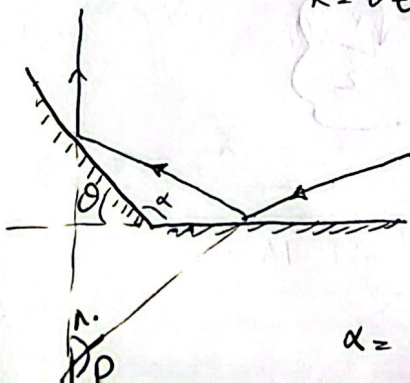
$$T = 1 \text{ s}$$

$$\omega = \frac{2\pi}{T} = \frac{2\pi}{1} = 2\pi \text{ rad/s}$$

$$v = \sqrt{\frac{F}{\mu}} = \sqrt{\frac{F}{\rho \cdot A}} = \sqrt{\frac{10 \times 10^3}{1 \times 10^3 \times 10^{-6}}} = \sqrt{10^4} = 100 \text{ m/s}$$

$$v = 100 \text{ m/s}$$

$$x = vt = 100 \times 1 = 100 \text{ m}$$



$$D = 180^\circ - 2\alpha$$

$$D = 180^\circ$$

$$D = 180^\circ - 180^\circ = 0^\circ$$

$$180^\circ = 180^\circ \rightarrow \theta = 0^\circ$$

$$\alpha = 180^\circ - 0^\circ = 180^\circ$$

$$r(\omega)$$

۵۵) ۱) $n_1 \sin \theta_1 = n_2 \sin \theta_2 = n_3 \sin \theta_3$

۲) $n_1 v_1 = n_2 v_2 = n_3 v_3$

۱) $\rightarrow n_1 \lambda_1 / v_1 = n_2 \lambda_2 / v_2 \rightarrow \frac{n_2}{n_1} = \frac{v_1}{v_2} = \frac{\lambda_1}{\lambda_2}$

نرخ حساسیت

$\rightarrow \frac{\lambda_2}{\lambda_1} = \frac{v_1}{v_2}$

$\frac{1}{\lambda} = R_H \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$

$\frac{1}{\lambda} = 1.09 \left(\frac{1}{(3)^2} - \frac{1}{(4)^2} \right) \rightarrow \lambda = 12.00 \text{ nm}$

پس، $\lambda = 12.00 \times 10^{-9} = 12 \times 10^{-9} \text{ m}$

$\frac{1}{\lambda} = 1.09 \left(\frac{1}{n_1^2} - \frac{1}{(n_1+1)^2} \right) \rightarrow \frac{1}{12} = \frac{1}{n_1^2} - \frac{1}{(n_1+1)^2}$

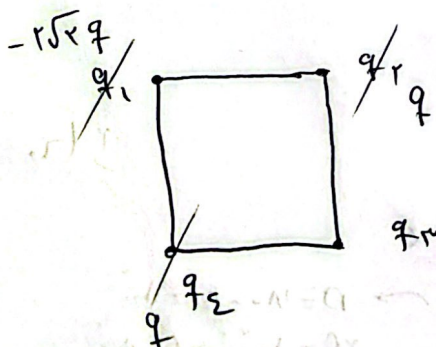
$n_1 = 3$ ✓
 $n_1 = 4$ ✗

$T = \lambda$



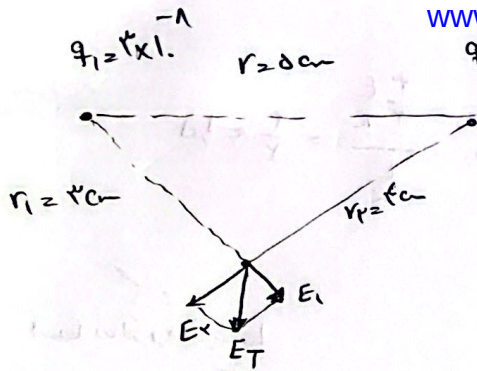
$\frac{1}{2} = 25\%$

میانهای باقی مانده



$\frac{q}{-1/2 q} = -\frac{\sqrt{2}}{2}$

$\frac{r}{2}$



$$E_T = \sqrt{E_1^2 + E_2^2}$$

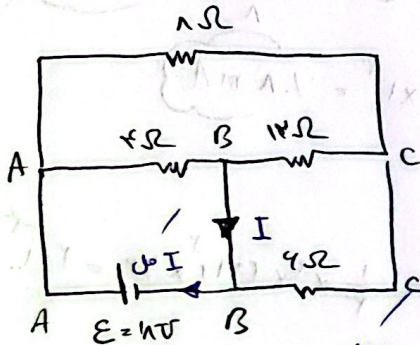
$$E_1 = \frac{kq_1}{r_1^2} = \frac{9 \times 10^9 \times 3 \times 10^{-9}}{(3 \times 10^{-2})^2} = 3 \times 10^5 \text{ V/m}$$

$$E_2 = \frac{kq_2}{r_2^2} = \frac{9 \times 10^9 \times 1.4 \times 10^{-9}}{(8 \times 10^{-2})^2} = 2 \times 10^5 \text{ V/m}$$

$$E_T = \sqrt{(3 \times 10^5)^2 + (2 \times 10^5)^2} = 3.6 \times 10^5 \text{ V/m}$$

نتیجہ حساب
۵۳۶۹.۲۴۲۹۴

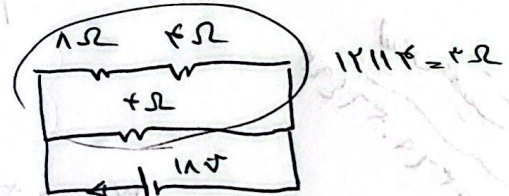
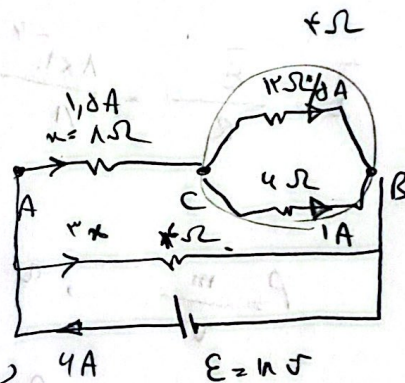
$$E = \frac{V}{d} = \frac{4}{3 \times 10^{-2}} = 133.33 \text{ V/m}$$



$$I = 0.5A - I_{4\Omega}$$

$$I = 4A$$

$$I = 1.5A$$



$$I = \frac{1A}{3} = 0.33A$$

$$I = 0.5A - I_{4\Omega}$$

$$I = 4 - 1 = 3A$$

$$R = \rho \frac{l}{A}, m = \rho V = \rho A l = \rho \left(\frac{\pi d^2}{4} \right) \times l$$

$$10 \times 3.14 \times 10^{-4} = \frac{10 \times 10^{-4} \times 3.14 \times l}{\pi} \rightarrow 3.14 \times 10^{-4} = \frac{3.14 \times 10^{-4} \times l}{\pi}$$

$$R = 3.14 \times 10^{-4} \times \frac{10 \times 10^{-4}}{\pi \times 10^{-4}} = 1.4 \Omega$$

$$l = 1 \times 10^{-4} \text{ m}$$

$$I_1 = \frac{\mathcal{E}}{R}$$

$$I_2 = \frac{\mathcal{E}}{\frac{2R}{3}}$$

$$\frac{I_2}{I_1} = \frac{\frac{3}{2} \frac{\mathcal{E}}{R}}{\frac{\mathcal{E}}{R}} = \frac{3}{2} = 1.5$$

1 (79)

مقاومت معادل / مقاومت معادل
① $R = 9 \Omega$

استفاده از دینامومتر 3 (79)

$R_{eq} = R_{eq}$
در حالت معادل

$$\bar{\mathcal{E}} = \frac{-N \Delta \phi}{\Delta t} = \frac{-1(0 - \phi_1)}{\Delta t}$$

$$\phi_1 = B A \cos \theta = 0.14 \times 10^{-4} \times 10^{-2}$$

4 (79)

$$\bar{I} = \frac{\bar{\mathcal{E}}}{R} = \frac{1.4 \times 10^{-6}}{1} = 1.4 \times 10^{-6} \text{ A}$$

$$\rho = \frac{m}{V}$$

$$v = \frac{1}{4} \pi r^2 h = \frac{1}{4} \times 10^{-4} \times \frac{1}{2} = 1.25 \times 10^{-5} \text{ m}^3$$

1 (79)

$$\rho = \frac{0.14}{1.25 \times 10^{-5}} = 11200 \frac{\text{kg}}{\text{m}^3}$$

2 (79)

$$W_{mg} = mgh = 1 \times 10^{-4} \times 10 = 10^{-3} \text{ J}$$

$$W_t = \Delta K = F_t \cdot d \rightarrow \frac{\Delta K_r}{\Delta K_t} = \frac{F_t(rd)}{F_t(d)} = r$$

3 (79)