

Λυ64

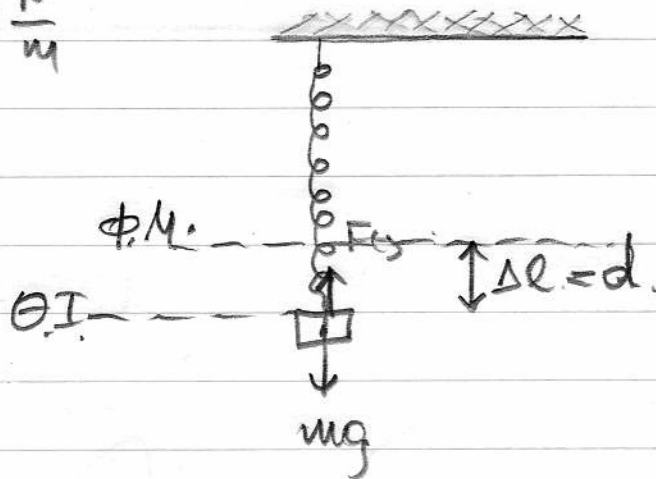
a)  $s = 2A \Rightarrow A = \frac{s}{2} = 0,2 \text{ m}$ ,  $\Delta t = \frac{T}{2} \Rightarrow T = \frac{2}{5} \text{ s}$  και  $\omega = 10 \frac{\text{rad}}{\text{s}}$

λογικη  $\Sigma F = 0 \Rightarrow F_{\text{ελ}} = mg \Rightarrow m = \frac{F_0}{g} = 0,1 \text{ kg}$ .

$k = D = m\omega^2 \Rightarrow k = 10 \frac{\text{N}}{\text{m}}$

b)  $U_{\text{ελ}} = \frac{1}{2} k \Delta \ell^2$

$\Sigma M_{\text{ΘI}} \text{ και } U = 0$   
 $\text{Οπως } F_0 = kd \Rightarrow$   
 $d = \frac{F_0}{k} = 0,1 \text{ m}$ .



Αρα  $U_{\text{ελ}} = \frac{1}{2} k d^2 = 0,05 \text{ J}$ .

γ)  $K_0 + U_0 = E \Rightarrow \frac{1}{2} m v_0^2 + \frac{1}{2} k d^2 = \frac{1}{2} k A^2 \Rightarrow v_0 = \sqrt{3} \text{ m/s}$ .

δ)  $\Delta K = W_{\Sigma F} \Rightarrow \frac{\Delta K}{\Delta t} = \frac{W_{\Sigma F}}{\Delta t} \Rightarrow \frac{\Delta K}{\Delta t} = \frac{\Sigma F \cdot dx}{dt} \Rightarrow$

$\frac{\Delta K}{\Delta t} = \Sigma F \cdot v \Rightarrow \frac{\Delta K}{\Delta t} = -D \cdot v = -10 \cdot 0,1 \cdot (-\sqrt{3}) \Rightarrow$

$\frac{\Delta K}{\Delta t} = \sqrt{3} \frac{\text{J}}{\text{s}}$ .