

Απαντήσεις Θεμάτων Φυσικής Α. 2017

$A_1 - \alpha, A_2 - \beta, A_3 - \gamma, A_4 - \delta, A_5 - \lambda, \lambda, \Sigma, \Sigma, \lambda$

B_1 : βραβύλη η (γ). Προωθείται από το άρτοκραζω των ελαστικών σαν δύο τριγώνων

B_2 : βραβύλη η (α). $a = \frac{\Sigma F}{m} \Rightarrow a = \frac{F}{m}$ } $\frac{a}{a'} = \frac{\frac{F}{m}}{\frac{2F}{m}} \Rightarrow$
 $a' = \frac{\Sigma F'}{m} \Rightarrow a' = \frac{2F}{m}$ } $\frac{a}{a'} = \frac{1}{2} \Rightarrow a' = 2a$

Θέμα Γ

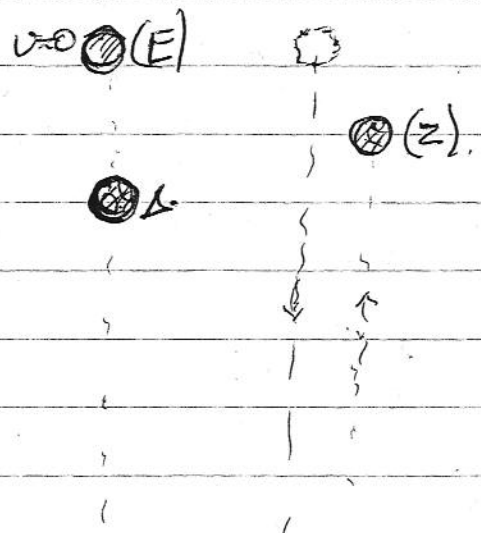
Γ_1) $v = v_0 - a \cdot t \Rightarrow t = \frac{v_0}{2a} = 2,5 \text{ s.}$

Γ_2) $s = v_0 t - \frac{1}{2} a t^2 = 25 - 6,25 = 18,75 \text{ m}$

Γ_3) $s_{01} = \frac{v_0^2}{2a} = \frac{100}{4} = 25 \text{ m.}$

Θέμα Δ.

Δ_1) $K_A + U_A = K_E + U_E \Rightarrow$
 $\frac{1}{2} m v_0^2 = m g h_E \Rightarrow v_0 = 10 \frac{\text{m}}{\text{s}}$



Δ_2) $K_A + U_A = K_\Delta + U_\Delta \xrightarrow{U_\Delta = 3K_\Delta}$
 $K_A = \frac{U_\Delta}{3} + U_\Delta \Rightarrow K_A = \frac{4}{3} U_\Delta \Rightarrow$

$\frac{1}{2} m v_0^2 = \frac{4}{3} m g h_\Delta \Rightarrow h_\Delta = 3,75 \text{ m.}$

Δ_3) $K_A + U_A = K_Z + U_Z \Rightarrow$
 $0,8 K_A = U_Z \Rightarrow 0,8 \cdot \frac{1}{2} m v_0^2 = m g h_Z \Rightarrow$
 $\Rightarrow h_Z = 4 \text{ m.}$

