Απαντήσεις Θεμάτων Α' Λυκηίου 2010

Θέμα 1ο 1.1.α , 1.2.β, 1.3.α, 1.4. α-1, β-3, γ-2, δ-5

Θέμα 2ο 2Α.γ δικαιολόγηση: ΑΔΟ: $P_{\text{πριν}} = P_{\text{μετά}} \Rightarrow mv = 2mV \Rightarrow$

$$V = \frac{v}{2}$$

2Β.β. δικαιολόγηση $T = \mu N \Rightarrow T = \mu \cdot B \Rightarrow T = 0,2 \cdot 2 \cdot 10 \Rightarrow$

$$T = 4N$$

Θέμα 3ο 3Α. $v = 6\text{σταθ}, \text{Άρα } \Sigma F = 0 \Rightarrow F = T \Rightarrow T = 125N$

$\Sigma F_y = 0 \Rightarrow N = B \Rightarrow N = 250N. \text{ Άλλα } T = \mu \cdot N \Rightarrow$

$$\mu = \frac{T}{N} = \frac{125}{250} \Rightarrow \mu = 0,5$$

3Β. $v = 6\text{σταθ}. \text{Άρα } \Sigma F = 0 \Rightarrow F = T = \mu N = \mu \cdot B \Rightarrow$

$$F = 0,5 \cdot 160 \Rightarrow F = 80N$$

3Γ. $F' = 160N. \quad \Sigma F = ma \Rightarrow 160 - 80 = 16a \Rightarrow a = 5 \frac{m}{s^2}$

$$x = \frac{1}{2}at^2 \Rightarrow x = \frac{1}{2} \cdot 5 \cdot 100 \Rightarrow x = 250m$$

Θέμα 4ο 4Α. $\Sigma F = ma \Rightarrow 40 - T = 10 \cdot 2 \Rightarrow T = 20N$

4Β. $W_F = F \cdot x = 40 \cdot 5 = 200 J$

$W_T = -T_x = -20 \cdot 5 = -100 J.$

4.Γ. ΘΜΚΕ : $\Delta K = W_{ολ} \Rightarrow K_\Gamma - \cancel{K_A}^{0} = W_F + W_T \Rightarrow$
$A \to \Gamma$

$K_\Gamma = 100 J$

4Δ. ΘΜΚΕ : $\Delta K = W_{ολ} \Rightarrow \cancel{K_\Delta}^{0} - K_\Gamma = W_T \Rightarrow -100 = -20(\Gamma\Delta)$
$\Gamma \to \Delta$

$\Rightarrow \Gamma\Delta = 5m \quad \text{Άρα } A\Delta = 10m.$