4996 pdf (ΑΠΑΝΤΗΣΗ)

ΘΕΜΑ Β

Β1) Α) Β)

Β) $E_{max} = U_{max} \Rightarrow K = mgh$

$E'_{max} = U'_{max} \Rightarrow K' = mg2h$

$\Rightarrow \frac{K}{K'} = \frac{1}{2} \Rightarrow K' = 2K$

Β2) Α) γ)

Β) $\alpha_1 = \frac{\Delta v_1}{\Delta t} = \frac{2v_1}{t_1}$

$\alpha_2 = \frac{\Delta v_2}{\Delta t} = \frac{v_1}{t}$

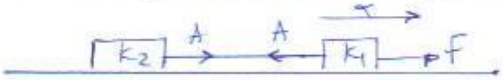
$\Rightarrow \frac{\alpha_1}{\alpha_2} = 2 \Rightarrow \alpha_1 = 2\alpha_2 \Rightarrow$

$\frac{F}{m_1} = 2\frac{F}{m_2} \Rightarrow m_2 = 2m_1$

ΘΕΜΑ Δ

Δ1) $m_1 = \frac{B_1}{g} = 15\,kg$, $m_2 = \frac{B_2}{g} = 25\,kg$

Δ2) K_2 : $\Sigma F_2 = m_2 a \Rightarrow A = m_2 a \Rightarrow a = 4\,m/s^2$



Δ3) K_1 : $\Sigma F_1 = m_1 a \Rightarrow F - A = m_1 a \Rightarrow F = 160\,N$

Δ4) $\frac{K_2}{W_F} \cdot 100\% = \frac{\frac{1}{2}m_2 v^2}{F \cdot x} \cdot 100\% = \frac{\frac{1}{2}m_2 \cdot a^2 \cdot t^2}{F \cdot \frac{1}{2} a t^2} \cdot 100\%$

$\frac{K_2}{W_F} \cdot 100\% = \frac{25}{40} 100\% = 62{,}5\%$