

4173 pdf (ΑΠΑΝΤΗΣΗ)

ΘΕΜΑ Β

B1)

A) α)

B) Αρχικά:  $\Sigma F = 0 \Rightarrow F - T = 0 \Rightarrow T = F = 10\text{N}$

Τέλει:  $\Sigma F = m \cdot a \Rightarrow F' - T = m \cdot a \Rightarrow$

$2F - T = m \cdot a \Rightarrow a = 2.0 \text{ m/s}^2$

B2)

A) β)

B)  $W_F = (-\tau \cdot \rho \cdot \omega) = 20 \text{ J}$

ΘΕΜΑ Δ

Δ1)

$\Sigma F = 0 \Rightarrow F = T = 4\text{N}$

$T = \mu N \Rightarrow \mu = \frac{T}{N} = \frac{T}{mg} = \frac{4}{20} = 0,2$

Δ2)

$P_F = F \cdot v$   $v = \frac{x}{t} = 0,25 \text{ m/s}$   $P_F = 4 \cdot 0,25 = 1 \text{ J/s}$

Δ3)

$T = m \cdot a \Rightarrow a = \frac{T}{m} = 2 \text{ m/s}^2$

$x_{\text{stop}} = \frac{v_0^2}{2a} \Rightarrow v_0 = \sqrt{2 \cdot a \cdot x_{\text{stop}}} = 6 \text{ m/s}$

Δ4)

$t_{\text{stop}} = \frac{v_0}{a} = 3 \text{ s}$

$v_f = \frac{x_{\text{stop}}}{t_{\text{stop}}} = 2 \text{ m/s}$

$\frac{\Delta K}{\Delta t} = \frac{W_T}{\Delta t} = P_T = -T \cdot v_f = -8 \text{ J/s}$