

Ασκ 459

$$R = 0,30 \text{ m}$$

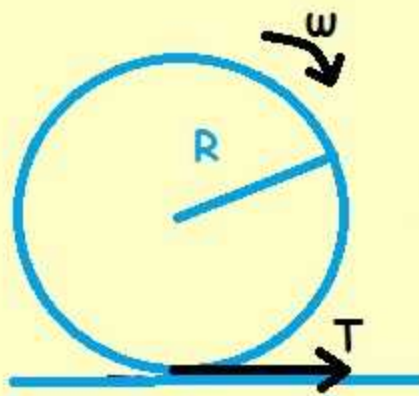
$$m = 1 \text{ kg}$$

$$f_0 = 100 / \text{min} = \frac{100}{60} = \frac{10}{6} \text{ Hz}$$

$$\Delta t = 5 \text{ Hz}$$

$$\mu = \frac{\pi}{5}$$

$$N = ;$$



Στην επιβραδυνόμενη κίνηση ισχύουν:

$$\omega = \omega_0 - \alpha_{\text{γων}} \cdot t \quad (1)$$

$$\theta = \omega_0 t - \frac{1}{2} \alpha_{\text{γων}} \cdot t^2 \quad (2)$$

$$\Sigma \tau = I \alpha_{\text{γων}}$$

$$TR = m R^2 \cdot \alpha_{\text{γων}}$$

$$T = m R \alpha_{\text{γων}}$$

$$\mu N = m R \alpha_{\text{γων}}$$

$$N = \frac{m R}{\mu} \alpha_{\text{γων}} \quad (3)$$

Όταν σταματήσει: $\omega = 0$: $(1) \Rightarrow \omega_0 = \alpha_{\text{γων}} \cdot t$

$$\alpha_{\text{γων}} = \frac{\omega_0}{t}$$

$$\alpha_{\text{γων}} = \frac{2\pi f_0}{t}$$

$$N = \frac{m R}{\mu} \cdot \frac{2\pi f_0}{t} = \frac{1 \cdot 0,3}{\frac{\pi}{5}} \cdot \frac{2\pi \cdot 10}{5 \cdot 6} = 1 \text{ N}$$

Άρα

$$N = 1 \text{ N}$$