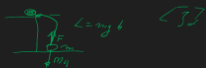


$$E_0 = \frac{1}{2} m v^2 \quad / \quad E_0 = m g h$$

$$L = \Delta E_0 = \frac{1}{2} m v^2 - \frac{1}{2} m v^2$$



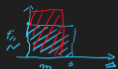
$$L_{\text{tot}} = 0 \quad L_{\text{tot}} = \sum_i \vec{r}_i \times \vec{F}_i$$



$$L = \vec{r} \times \vec{F}$$

$$= F r \sin \alpha$$

$$= F_{\perp} r$$



$$A = \int_{-a}^a dx = 2a$$

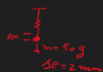


$$A = 2a$$



$$F = -kx \Rightarrow -k \Delta x$$

$$L = \frac{1}{2} k x^2 = \frac{1}{2} \cdot 0.05 \cdot 0.01 = 2.5 \cdot 10^{-6} \text{ J}$$



$$k = \frac{F}{\Delta x} = \frac{0.05 \cdot 0.01}{0.002} = 250 \text{ N/m}$$

$$L = \frac{1}{2} k x^2 = \frac{1}{2} \cdot 250 \cdot 0.01^2 = 1.25 \cdot 10^{-2} \text{ J}$$

$$V_f = \sqrt{\frac{k \Delta x^2}{m}} = \sqrt{\frac{250 \cdot 0.01^2}{0.002}} = 1.118 \text{ m/s}$$

$$V = \sqrt{\frac{k}{m}} \cdot \Delta x = \sqrt{\frac{k}{m}} \cdot \Delta x = \sqrt{\frac{k \Delta x^2}{m}}$$

