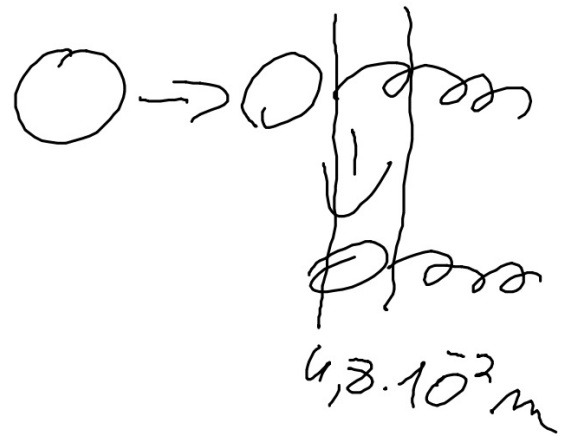


$$m = 2,9 \text{ Kg}$$

$$V = 1,6 \text{ m/s}$$

$$\Delta x = 4,8 \cdot 10^{-2} \text{ m}$$



$$K = \frac{1}{2} m v^2$$

$$U_e = \frac{1}{2} K x^2$$

$$K = \frac{2U_e}{x^2} \rightarrow K = \frac{m v^2}{x^2}$$

$$3,2 \cdot 10^3 \text{ N/m}$$

$$K = \frac{mv^2}{x^2} \rightarrow Kx^2 = mv^2$$

$$v^2 = \frac{Kx^2}{m}$$

$$v = \sqrt{\frac{Kx^2}{m}}$$

$$K = 3,2 \cdot 10^3 \frac{N}{m}$$

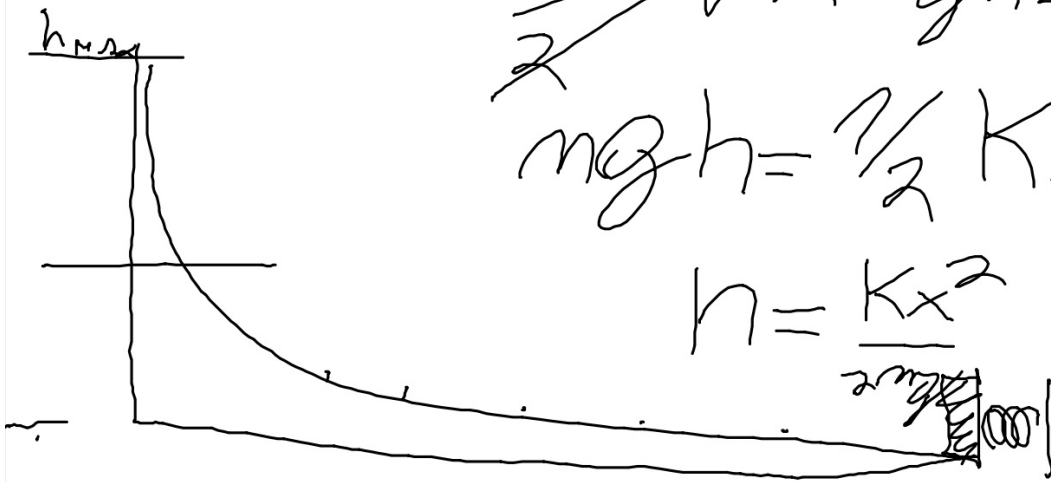
$$m = 2,2 \text{ kg}$$

$$\Delta x = 4,8 \cdot 10^{-2} \text{ m}$$

$$\cancel{\frac{1}{2} m v^2} + mgh = \frac{1}{2} m v^2 + mgh$$

$$mgh = \frac{1}{2} K x^2$$

$$h = \frac{K x^2}{2mg}$$



$$\cancel{m}gh = \frac{1}{2}kx^2$$
$$\frac{\quad}{2} \rightarrow a$$

$$mgh = a$$

$$h = \frac{a}{mg}$$

$$V_1 = 30 \frac{\text{m}}{\text{s}}$$

$$V_2 = 60 \frac{\text{m}}{\text{s}}$$

$$t = 10 \text{ s}$$

$$m = 2 \text{ kg}$$



$$F_s = \mu_f \cdot F_N$$

$$\mu_f =$$

$$F = ma \rightarrow F + F_{\text{app}} = ma$$

$$\mu_s = \frac{6 \text{ N}}{2(\text{g})}$$

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FORZE NON CONSERVATIVE

$$L_{\text{TOT}} = \Delta K$$

$$E_f - E_i = L_{\text{NC}} < 0$$

$$L_C + L_{\text{NC}} = \Delta K$$

$$-\Delta U + L_{\text{NC}} = \Delta K$$

$$L_{\text{NC}} = \Delta U + \Delta K$$

MINORE
DI ZERO

$$L_{\text{NC}} = \Delta E$$

E_1

$h = 1,5 \text{ m}$ $m = 1,60 \text{ Kg}$ $\mu_d = 0,660$



$$\vec{L} = \vec{F}_a \cdot \vec{S} = F_a \cdot l = \mu_d \cdot (mg) \cdot l$$



SENZA ATRITO

$$E_i = mgh$$

$$E_f = E_i$$

$$E_f = \frac{1}{2} m v_f^2$$



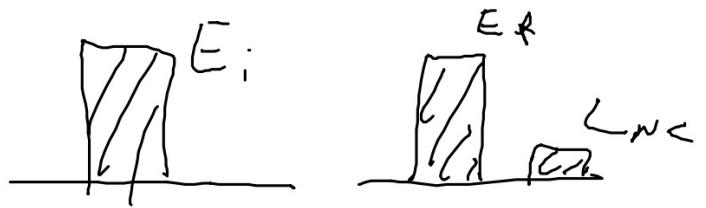
$l = 30,0 \text{ cm} = 0,3 \text{ m}$

CON ATTRITO

$$E_i = mgh$$

$$E_f = \frac{1}{2}mv_f^2$$

$$L_{nc} = \mu_d mgl$$



$$E_f$$

$$E_i - L_{nc} = E_f$$