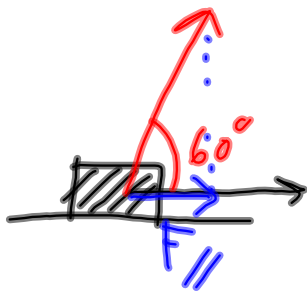


es. 10



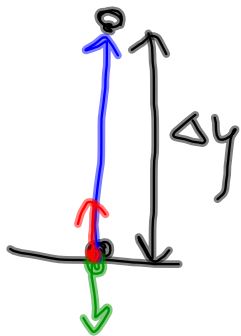
$$F = 10 \text{ N}$$

$$s = 5,0 \text{ m}$$

$$F \cdot s \cdot \cos \alpha$$

$$L = \vec{F} \cdot \vec{s} = F_{\parallel} \cdot s = 5 \text{ N} \cdot 5,0 \text{ m} = 25 \text{ J}$$

es. 12

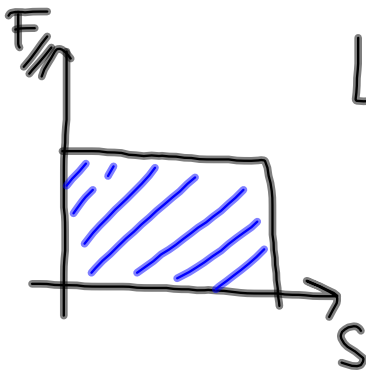


$$L_P = -mg \cdot s$$

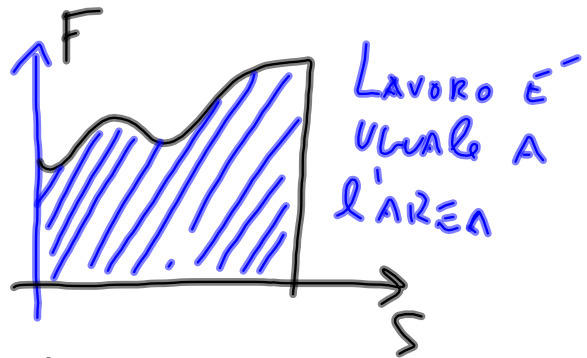
$$L_B = mg \cdot s$$

$$L_{\text{tot}} = 0$$

LAVORO FORZE NON COSTANTI

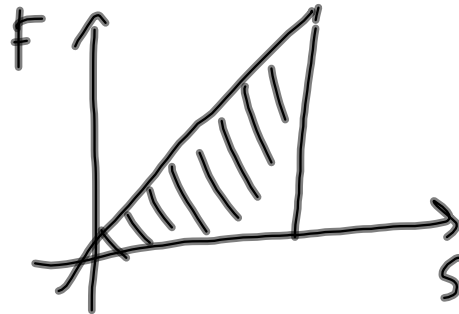


$$L = F_{//} \cdot s$$



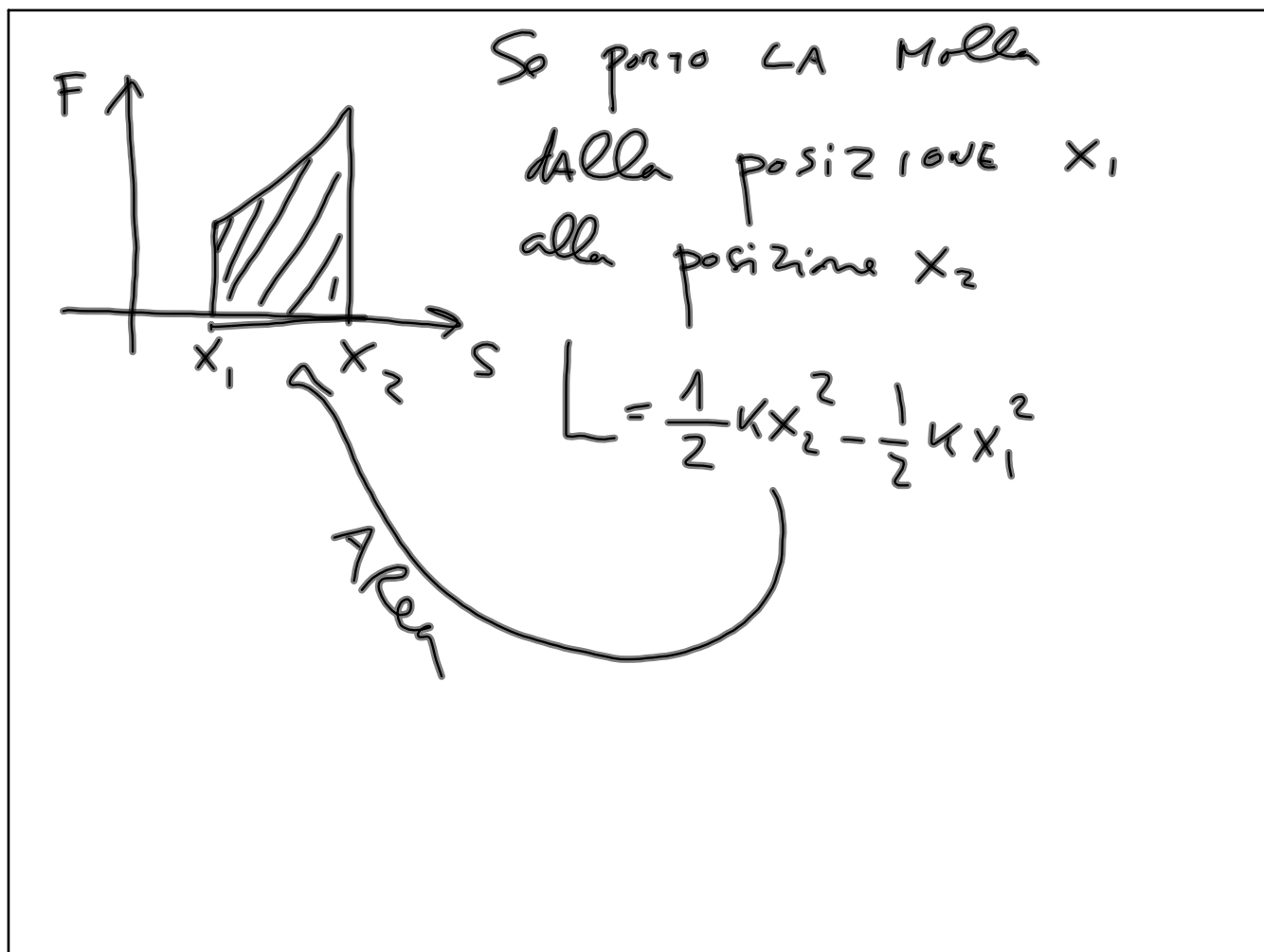
$$F_e = k \Delta x$$

$$L = \frac{1}{2} k \Delta x^2$$



pezzo i

pezzo Δx



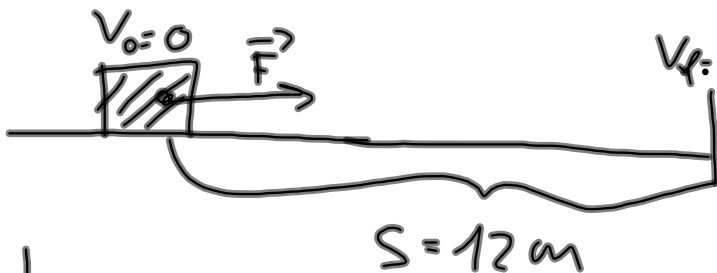
ENERGIA CINETICA

$$L = W$$

$$K = \frac{1}{2} m v^2 \quad \leftarrow \text{Joule.}$$

$$L_{\text{AVORO}} \longleftrightarrow K$$

$$L_{\text{TOT}} = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2 = \Delta K$$



$$S = 12 \text{ m}$$

$$m = 10 \text{ kg}$$

$$v_i = 0$$

$$v_f = 3 \text{ m/s}$$

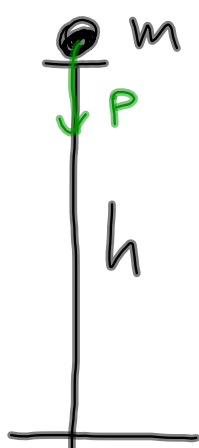
$$L_{\text{TOT}} = \Delta K$$

$$F \cdot S = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2$$

$$F = \frac{1}{2} \frac{m v_f^2}{S} = \frac{1}{2} \frac{(10 \text{ kg})(3 \text{ m/s})^2}{12 \text{ m}}$$

A diagram showing two cars on a horizontal track. The left car is moving to the right at 60 km/h and has a red force vector \vec{F} pointing to the left. The right car is moving to the left at 30 km/h and has a red force vector $-\vec{F}$ pointing to the left. A distance $S = 20 \text{ m}$ is marked between the cars. The mass of the right car is given as $m_R = 1700 \text{ kg}$. A red box contains the expression $L < 0$.

$$L_{\text{TOT}} = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2 < 0$$



$$P = mg$$

$$L = mgh$$

$$\Delta K = \frac{1}{2} m v_f^2$$

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

$$v = \sqrt{2gh}$$