

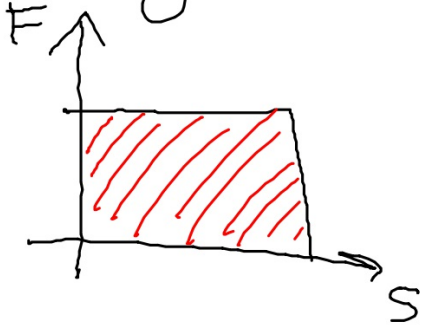
$$F_a = 0,272 \text{ N}$$

$$m = 71,5 \text{ kg}$$

$$L = W = 642 \text{ J}$$

LAVORO FORZA VARIABILE

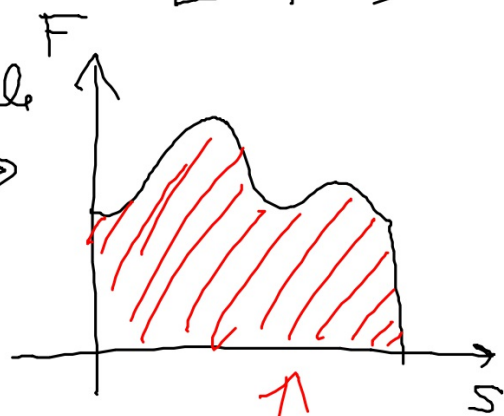
in generale



in generale

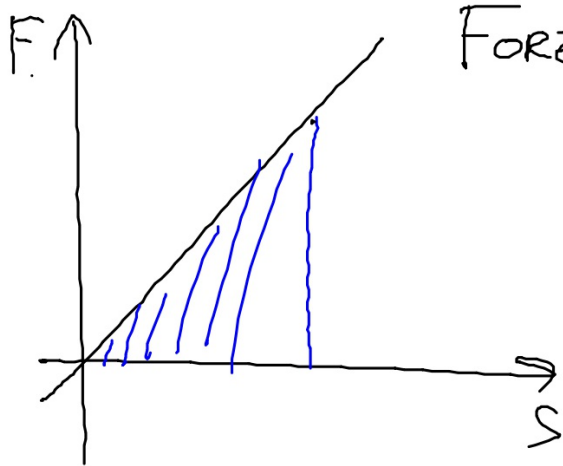


$$L = \vec{F} \cdot \vec{s}$$



esempio: Forza elastica

$L = \text{Volume}$



FORZA elastica $F_e = kx$

$$L = \frac{1}{2} kx^2$$

Ist. iniziale
Molla Riposo

Ist. finale
Molla Allungata di x .

ENERGIA CINETICA

Kinetic.

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

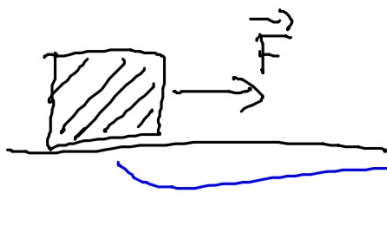
• Si misura in Joule

• E' una scalare

Relazione



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



$$F = 12 \text{ N}$$

$$s = 15 \text{ m}$$

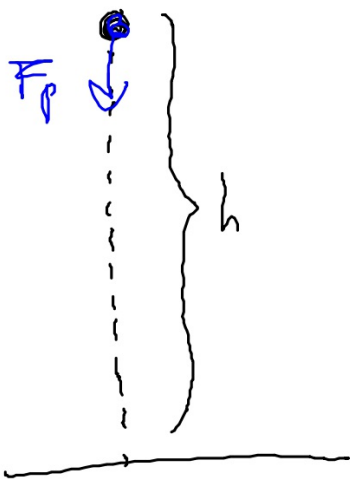
$$m = 5 \text{ kg}$$

$$L = F \cdot s$$

$$V_f = ? \quad V_i = 0$$

$$L = \Delta K = \frac{1}{2} m V_f^2 - 0$$

$$V_f = \sqrt{\frac{2L}{m}} = \sqrt{\frac{2F \cdot s}{m}}$$



$$\underline{L_{\text{Tot}} = \Delta K}$$

$$V_i = 0$$

$$h = 6 \text{ m}$$

$$m = 3 \text{ kg}$$

$$V_f = ?$$

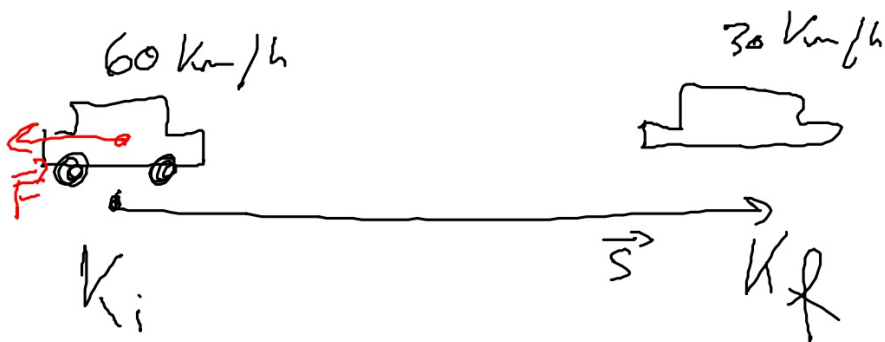
$$L = (F_p) \cdot h$$

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

~~V_f~~ \rightarrow

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

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



$$m = 700 \text{ kg}$$

$$s = 15 \text{ m}$$

$$F = ?$$

$$\Delta K = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2 < 0$$

$$= \frac{1}{2} (700 \text{ kg}) \left(30 \frac{\text{km}}{\text{h}} \right)^2 - \frac{1}{2} (700 \text{ kg}) \left(60 \frac{\text{km}}{\text{h}} \right)^2$$

$$\Delta K = F \cdot s$$

$$F = \frac{\Delta K}{s}$$

$\text{Ⓢ} \leftarrow 15 \text{ m}$

FORZE CONSERVATIVE E ENERGIA POTENZIALE

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