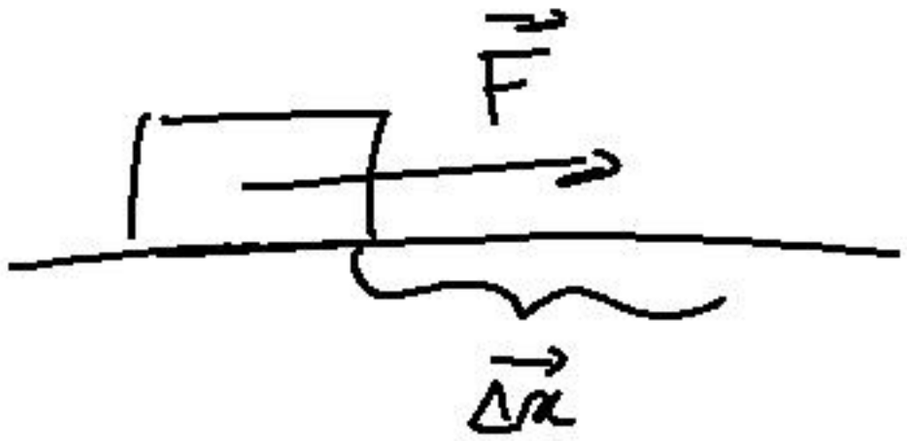
Lavoro $\longleftrightarrow$? $\longleftrightarrow$ Energia cinetica

$\vec{F}$ cost Moto rettilineo
$\vec{F}$ cost

$$L = \vec{F} \cdot \Delta\vec{x} = F \cdot \Delta x$$



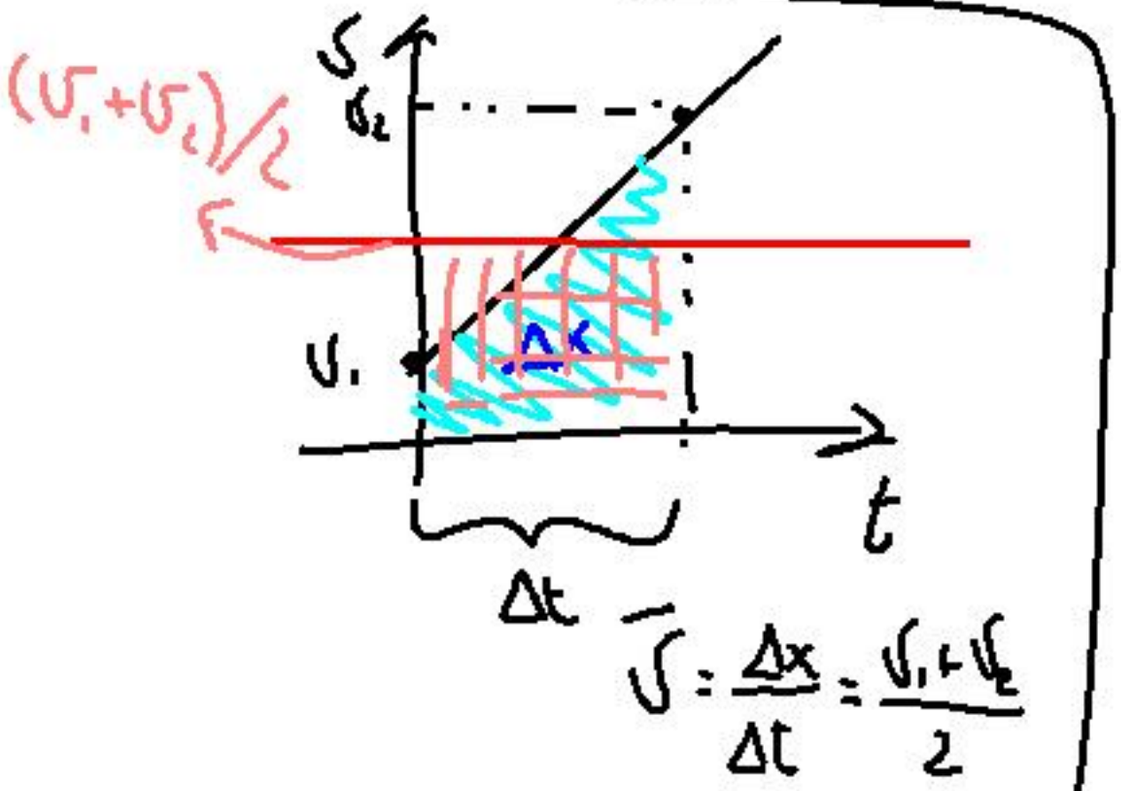
$$\vec{F} = m\vec{a}$$

$$L = ma \cdot \Delta x =$$

$$= m \frac{\Delta v}{\Delta t} \cdot \Delta x$$ ($\frac{\Delta x}{\Delta t}$ = Velocità media)

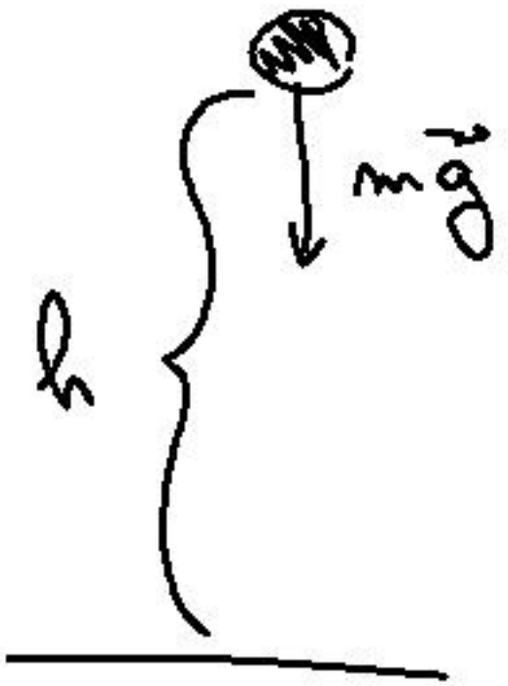
$$= m (v_2 - v_1) \cdot \bar{v} =$$

$$= m (v_2 - v_1) \cdot \frac{(v_2 + v_1)}{2}$$



$$L = \frac{1}{2} m \left(v_2^2 - v_1^2\right) = \Delta T$$

$$L = \frac{1}{2} m \left(v_2^2 - v_1^2 \right)$$



$$L = mgh$$

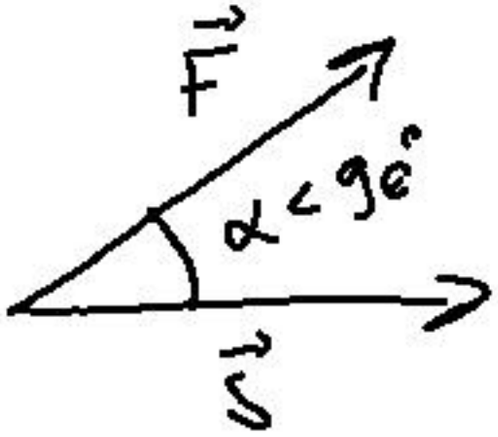
$$\Delta T = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2$$

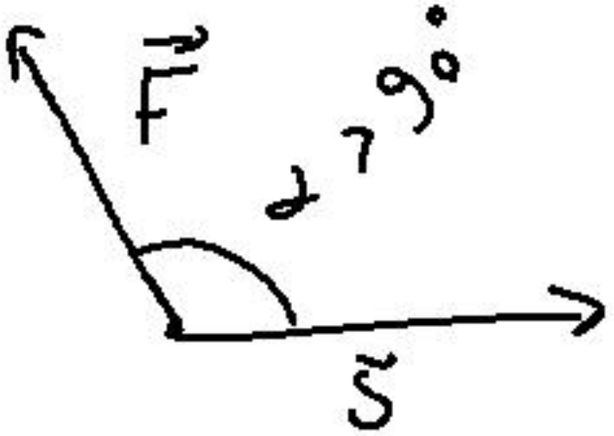
$$\frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2 = mgh$$

$$v_f^2 = 2gh + v_i^2$$

$$v_f = \sqrt{2gh + v_i^2}$$

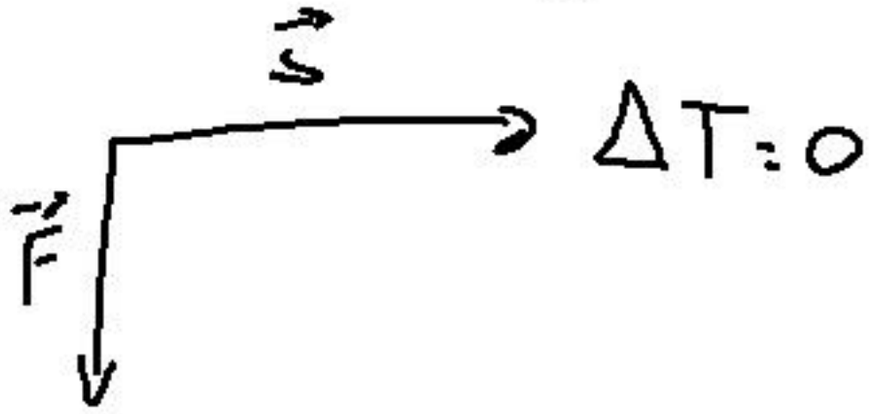
$L > 0$



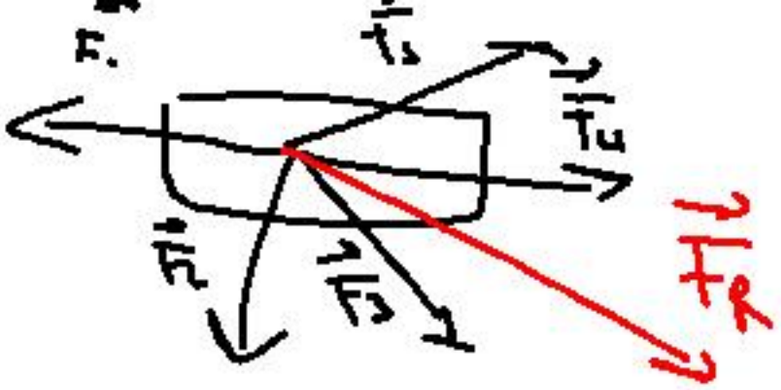


$L < 0 \rightarrow \Delta T < 0$

$L = 0$



$\Delta T = 0$



$$L_{TOT} = L_1 + L_2 + L_3 + \dots =$$

$$= \vec{S}\vec{F}_1 + \vec{S}\cdot\vec{F}_2 + \vec{S}\cdot\vec{F}_3 + \dots =$$

$$= \vec{S}\cdot\underbrace{\left(\vec{F}_1 + \vec{F}_2 + \vec{F}_3 + \dots\right)}_{\vec{F}_R}$$

$$L_{TOT} = \Delta T$$