

Impulso

$$\begin{aligned} I_F &= \int_{t_0}^{t_f} \vec{F} \cdot dt = \int_{t_0}^{t_f} m \cdot a \, dt = m \int_{t_0}^{t_f} \frac{d\vec{v}}{dt} \cdot dt = \int_{t_0}^{t_f} m \cdot d\vec{v} \\ &= \int_{\vec{p}_0}^{\vec{p}_f} d\vec{p} = \boxed{I = \vec{p}_f - \vec{p}_i} \quad \text{Impulso} \end{aligned}$$

$\vec{p} = m \cdot \vec{v} \Rightarrow d\vec{p} = m \cdot d\vec{v}$