

## 2) LAW OF CONSERVATION OF MOMENTUM

$$\vec{I}_F = \int_{t_1}^{t_2} \vec{F} dt = \vec{p}_2 - \vec{p}_1$$
$$\vec{p}_2 - \vec{p}_1 = \vec{0}$$

$$\vec{I}_F = \int_{t_1}^{t_2} \vec{F} dt = \vec{0}$$

a)  $\vec{F} = \vec{0}$

b)  $\vec{F} = \vec{F}(t)$

$$\vec{p}_2 - \vec{p}_1 = \vec{0}$$

$$m \vec{v}_2 - m \vec{v}_1 = \vec{0}$$

$$m \vec{v}_2 = m \vec{v}_1$$

for  $m = \text{const.}$

$$\vec{v}_2 = \vec{v}_1$$

